

Leveraging Educational Quality in Southern African Educational Systems

A Practitioners' Perspective



Edited by
Munyaradzi Mawere & Patient Rambe

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Introduction

Patient Rambe

The discourse on educational quality is highly momentous and has sustained controversies of epic proportions in African educational systems. Given the nebulous nature of educational quality coupled with the different interpretations evoked by the deployment of the concept across different disciplines, a robust comprehension of the concept calls into question its practical manifestations and application in particular situated contexts, particularly those of emerging economies. In these contexts, however, the meaning of educational quality is often assumed, taken for granted, loosely and uncritically applied despite the paucity of a common, universal definition.

To further compound the aforementioned problematique, educational quality discourses the world over and Africa in particular have evolved and continue to be funnelled through multiple epistemological lenses. These range from an examination of the **robustness of educational outcomes** including the academic significance and relevance of **intellectual, emotional and social-structural processes** that give rise to student “graduateness.” Although these differentiated considerations should be conceived individually to understand their impact on educational quality, their synergy also renders a more balanced, constitutive account of the complex attribute of educational quality.

Educational outcomes often emphasised the actual student performance, their cogitative capacity including the employing industries and professions’ perceptions of the (absolute or envisaged) quality of graduates. Intellectual manifestations of educational quality call into question the following: enhancement of student critical consciousness (about processes of producing and authenticating knowledge), critical literacy practices, enactment of student agency and self-regulation and closing the articulation gap between them. The **emotional aspects**, which capture the psycho-social domain, foreground individual student psychology’s transactions with the

immediate intellectual and social environment, which undergirds the knowledgeable other (academics, peers and extended learning community), knowledge networks and educational technology. Emotional concerns are underpinned by students' (and learning community's) experiences and perceptions of the inclusivity of this environment, heightening psychological access to resources, overcoming deprivation, discrimination, exclusion and eliminating a sense of psychological dominance over the academically at-risk students. **Socio-structural issues** target broadening other forms of access, enhancing student retention rates and heightening the throughput rates in turnaround time.

While these issues are inexorably complex to address in their entirety in one volume, they are worthy of further interrogation particularly in culturally diverse, historically fragile (or even tumultuous) educational milieus like those of South Africa, Mozambique Zambia and Zimbabwe, the contexts where the case studies examined in this book emerge. In these nation states, the enigmatic amalgam of a complex history of skewed colonial education with its social vestiges, vices and anomalies, persistent exposure of emerging economies to the vagaries of foreign capital, dwindling external injections of donor funding for education, educational systems that untenably depend on national treasury of fiscus and survival, insurmountable pressure from national governments and general populace to access basic, secondary and higher education, a reality check on the status of educational quality in these countries is befitting and more relevant now than ever.

Mindful of these realities, this diverse, impeccable collection strives to contribute to the enhancement of educational quality in the aforementioned Southern African states by rendering insights on and acknowledging the educational potential, possibilities, contradictions and complexities occasioned multiple educational considerations. These include indigenous knowledge systems, instructional practices based on foreign languages, controversial forms of academic discipline like corporal punishment, emerging Web-based technologies and international research collaborations and networks. This volume, therefore, draws on the international experiences,

diverse knowledge and empirical narratives of researchers drawn from different highlighted Southern African countries, to provide nuanced, thought provoking accounts that richly inform educators and practitioners alike on their endeavours of enhancing quality educational delivery in their institutions.

Drawing on his wealth of experience of lectureship and research in Mozambique, Mawere grapples with a handful of highly controversial, morally volatile subjects like the relevance of the deployment of corporal punishment in that country's primary and secondary schools, the complexity of instructional delivery of foreign languages including the academic relevance of code switching (switching from Portuguese to English and vice versa during instruction). In another chapter, Mawere tussles head on with traditional methods of education in pre-colonial Zimbabwe to locate their locus and relevance for improved educational quality in a contemporary society plagued by social uncertainty about tradition, cultural fragilities and social ambiguities imposed by a globalised world and general instability in a post-crisis scenario. Mawere's historic contribution concludes with a closer examination of the pervasive privatisation of tertiary education in Africa and in the process, interrogates the implications of this neoliberal discourse for a country like Mozambique, that is currently emerging out of the post-reconstruction and consolidation era.

The discourses on educational quality and the contribution of emerging technologies to educational delivery especially engagement, have often been mistakenly conceived as disparate, incongruent considerations. Nevertheless, mindful of the surging scholarship on emerging technologies' contribution to academic engagement in recent years, the nexus between educational quality and quality educational provision can no longer be denied, and hence needs to be reconsidered. As such, Rambe's theoretical contribution lies in the quest for technology-mediated models that afford deep, context-sensitive learning for students at South African higher educational institutions (SA HEIs). He also explores the architecture of appropriation of the popular, but least understood emerging technologies at SA HEIs with the intention of rendering insights that

could inform the quality of technology-mediated pedagogy. In his third chapter, Rambe develops a synthesised account of how a mobile instant messaging application, WhatsApp, was adopted by an innovative educator in an Information Technology module at a South African University of Technology. He marshals practical examples on the appropriation of this tool to illustrate how academically at-risk students were scuffled by peers and the educator during complex IT problem solving including the emergent pedagogical changes that accompanied the process. In his last chapter, Rambe (re)constructs a unified compendium of how existing and new technologies can be harnessed as dialogic and reflexive tools for deepening meaningful learning and developing new ways of thinking about user-generated content, concepts and applications by heterogeneous university students.

Lastly, Menon and colleagues' luminary work deliberately targets an often neglected niche of international research collaborations to provide a systematic, insightful piece on how these networks could be deployed to positively impact university education in Africa. Drawing on insightful collaborative arrangements between the University of Zambia and selected strategic universities in remote parts of the advanced world, their work makes a conscious, concerted endeavour to unpack the niceties, envisaged potential including the dashed aspirations constitutive of these packages. The authors, in the process, provide an eloquent, nuanced narrative on the implications of international collaborations for improving the quality of educational delivery at the University of Zambia in particular and lessons for the rest of Africa in general.

With its incisive but rigorous academic excursion on the Southern African educational terrain, this book is a must-read for African educators, cognoscenti and policy makers the world over perplexed by advancing the quality of education and passionate about developing pragmatic strategies aimed at addressing the problematic concerns of quality education. This refreshing expose steeped in honesty, which reconciles different perspectives, arguments and contexts is an intellectual fait accompli worthy of inclusion in one's cherished collection. Enjoy it!

Child education in pre-colonial Africa: Lessons from traditional strategies used to raise and educate children in pre-colonial Zimbabwe

Munyaradzi Mawere

Abstract

While curriculum reform has been heavily discussed in educational studies in the last decade, studies on the subject have emphasised reforms by western scholars and philosophers such as John Dewey, Rousseau and Peters. Insignificant attention has been devoted to examining the place as well as positive contribution of traditional strategies used in raising and educating the young by African traditional societies before the advent of colonialism in Africa. This chapter critically examines strategies used in the traditional Shona society of Zimbabwe in raising children and initiating them into adulthood before colonialism. The chapter further examines the impact of disusing traditional teaching strategies on the current public education curricula at both primary and secondary levels. The continued relevance of traditional education strategies (even) albeit westernization and globalization needs to be critically examined to foster and renders a vantage point for the nexus between educational quality and quality educational provision in contemporary education landscapes in Africa. As such, the potency of this chapter lies in its argument that if adopted the philosophy and values embodied in traditional “education” strategies can positively render insights that inform educational psychology of the young and improve the general quality of education in African societies such as Zimbabwe.

Introduction

Before the advent of colonialism in Africa, Zimbabwean children were educated or rather initiated into adulthood using traditional educational strategies drawn largely from the African society. As such, the process of carrying traditional values to posterity was done in a harmonious, friendly way that ensured the African survival. With colonialism in Africa, the learning process for the young was reversed. A minority of the black children had access to the ‘formal education’. In Zimbabwe, for example, those who had access to education found themselves in schools that were poorly funded, with very few educational resources and a separate curriculum from that offered in all-white schools. Education for black students was provided mainly by missionaries rather than by the colonial government (see Mawere 2012b). Basically, two school systems existed prior to independence. The colonial government made education for white students compulsory and therefore offered universal education that spent as much as 20 times more per white student than on the black student (Ministry of Education, Sport & Culture, 2001). Worse still, traditional or ‘informal education’ was viewed as useless, unfit for the humanisation of the African child and unsuitable for use both inside and outside the classroom. The colonial governments’ refusal to integrate the traditional education strategies meant devalorisation and destabilisation of the African societies and values. Mawere (2010: 209) affirms this by asserting that:

The West considered Africa as a ‘dark continent’, and hence despised its traditions, customs, belief systems, and indigenous knowledge systems as diabolic, barbaric, and backward. This had a negative impact to Africa’s own socio-economic and political development. Africa’s valued traditions and knowledge systems had to change to fit in with the western scientism and modernity.

During the liberation struggle in many African countries, those who were political leaders promised the ‘guerrillas’ and the ‘masses’

to address all the above social injustices in education as well as many other politico-economic problems that resulted from the White government's draconian laws. Surprisingly, when the black African government took over from the British government in Zimbabwe in April 1980, it inherited an education system that in spite of its preference for the black students, undermined the African values, particularly the traditional education strategies for raising and educating children. Instead of integrating the traditional education strategies that were rendered valueless and discarded by the White government in the education curriculum, insufficient attention has been paid to include traditional strategies in the mainstream education even to date when we are three decades into independence. In the light of this background, one may wonder how the Zimbabwean education system can make itself a structure that is hospitable as Newman (1854) put it, 'a place of concourse, where students come from every quarter for every kind of knowledge'. It therefore remains clear that in many African countries, and in particular Zimbabwe, there is still use of inappropriate curricular that does not consider the learners' context, in this case, the education system of the former colonial master. Thus, though the government has made great strides with its first and major reforms, being 'Universal basic education' and 'Growth with equity', that seeks unification of the separate education systems to remove anomalies and inequalities in access to education, it has failed to integrate the traditional education curriculum with the formal one.

In view of this backdrop, this chapter examines the traditional education strategies that were used in pre-colonial Zimbabwe in raising and educating the young as well as initiating them into adulthood. Furthermore, the chapter examines the impact on the African child and in particular the Shona child, of abandoning the education strategies that were used in traditional pre-colonial period Zimbabwe.

Theoretical framework for understanding traditional African ‘educational’ systems

As Riddel (1998) rightly pointed out, there are many different ways that one could categorise the different ‘themes’ of educational reform that have been prominent in developing countries. These can be divided broadly into three groups:

- 1). Planning and efficiency reforms;
- 2). Quality reforms; and
- 3). Curricular reforms.

Riddel also points that there are no clear boundaries among these broad groups as they are closely interrelated and sometimes overlap. For this reason, the present study discusses educational reforms in Zimbabwe within the context of the above categories where possible. Yet I should quickly mention that the present study is within the broad theoretical framework of curricular reforms. This is because lobbying for the inclusion or integration of traditional education strategies in public education is advocacy for curricular reform, hence traditional education strategies fall within the precincts of the broad concept of curricular reforms.

It is important to note that traditional education strategies have originated naturally and locally. However, a critical question arises here: ‘What does it mean to be local?’ In relation to this question, another critical question can be raised: ‘Do traditional education strategies only exist in pre-colonised geographical areas?’ Considering these two critical questions, my conception of traditional education strategies is drawn and hinged on indigenous knowledge systems. Indigenous knowledge system is “a complex set of knowledge and skills existing and developed around specific conditions of populations and communities ‘indigenous’ to a particular geographic area with the purpose to educate the young and initiate them into adulthood” (Ocholla 2007: 2). My drawing of the conception of traditional education strategies from indigenous knowledge system should not, however, misunderstood to mean equating indigenous

knowledge systems with traditional education strategies as it is clear that the latter is a constituent part of the former. Yet from my understanding of the connection between indigenous knowledge system and traditional education strategies, I argue that traditional education strategies just like indigenous knowledge systems are systems so complex to unpack unless one fully understands the society and conditions in which they were/are formed. In particular, the complexity of traditional education strategies results from the logical qualification with the word ‘strategy’ as it suggests creative thought and practice as well as a network and ‘meshwork’ of processes with different components such as knowledge, belief and skill. On the other hand, traditional education strategies are local and/or ‘indigenous’ because the meanings and categories of sense making are generated internally within a cultural community, that is, within a particular, defined spacial geography where local values of its people are/were produced through ‘indigenous’ thinking or exploration whether material, philosophical, religious or linguistic. That said, I define traditional education strategies as bodies of knowledge that were/are developed through the processes of acculturation and through kinship relationships that societal groups form, and are handed down to posterity through oral tradition as well as cultural practices like rituals and rites. Also, traditional education strategies, just like indigenous knowledge systems in which they are embedded, remain the adhesives or ‘epoxy resin’ that bind societies, and in particular, those that still use them even outside formal education curriculum, as they constitute communicative processes through which knowledge, moral values and philosophy of life of a particular people are transmitted to posterity, preserved and acquired especially by the young. In light of the theoretical framework articulated in this section, the ensuing paragraphs examine the traditional strategies that were used by the Shona people of Zimbabwe during the pre-colonial period and that continue to be used in some Zimbabwean societies as a complement of the formal education’s curriculum.

Strategies for raising and educating the young in Shona ‘traditional society’ of Zimbabwe: A closer look

Contrary to the situation in modern Zimbabwe where the education curriculum adopted from the former colonial master, Britain continue to dominate the education system and the official curriculum in both private and public education, pre-colonial Zimbabwe society deployed a myriad of ‘traditional’ education strategies to educate and raise the young. While these were many in the Shona traditional culture and all enshrined in indigenous knowledge systems, for purposes of this study only the following will be given more attention: ‘*ngano*’ (folktales), ‘*zviraabwe*’ (riddles), ‘*tsoro*’ (draughts), games to remember names such as *dede zengera uyo mutii?* (guess what tree is that), and *zvierwa/zviera*’ (taboos). The concept of indigenous knowledge systems though somehow confusing and have enjoyed multiple interpretations, for purposes of this study not all of these interpretations will be elaborated. Instead, I will identify with Ocholla’s (2007) recent definition elaborated in the preceding section where he states that “indigenous knowledge systems are a complex set of knowledge and technologies existing and developed around specific conditions of populations and communities indigenous to a particular geographic area”. In the ensuing paragraphs, each of the abovementioned strategies will be elaborated, especially on how they were used to educate and initiate the young into adulthood.

Ngano (folktale)

‘*Ngano*’ are folk tales that mature older people recounted to young children especially those undergoing elementary education, but even adult persons could also listen to the stories. The stories are often fictitious but generated to offer a wide range of lessons to the young children and served to inculcate values in them. The stories were normally told by ‘*sarungano*’ (story teller) who was an elderly and well experienced person of reputable character in the clan or extended family. This can be an old woman (grandma/aunt) or an old, wise man (*sekuru*).

In a typical Shona traditional culture, as in many other African traditional cultures, '*ngano*' [in both singular and plural] were told in the dry season (winter and summer) at night when the activity would not disturb normal chores/activities of the day. To narrate '*ngano*,' both the '*sarungano*' (story teller) and '*vateereri*' (listeners/audience) were supposed to be present. With his thrilling stories, the story teller managed to 'take' his/her audiences from this physical world to the world of fantasy, from the world of reality to the unreal. The stories involved different characters ranging from animals, snakes, birds and persons, but all personified. To educate the young through '*ngano*,' the villains in '*ngano*' are never cherished or successful, but most often conceived as failures and punished for their misdeeds. The lessons, which often carried moral and ethical weight revolved around aspects of life like knowledge about the good, bad, right, or wrong in relation to others, and how the natural environment should be cared for, conserved and exploited to ensure the continued thriving of resources. It is in this way that '*ngano*' were used as traditional education strategies in pre-colonial Zimbabwe as in many other pre-colonial African societies.

Zvirahwe (Riddles)

Riddles like '*ngano*' (folktale), were done during the dry season and in the evenings so as not to disturb the rhythm of work and chores during the day. This is not to say that there were no games played during summer. Children played other games during the day as they were herding cattle (in the case of boys) or domestic chores (in the case of girls). The age of participants normally ranged from between 7 and 15.

Technically, a riddle can be defined as a 'puzzle or word play' (Chesina, 1994: 14). Chesina further points that in order to play riddles, one should be able to exercise some high degree of reasoning. Also worth noting is the fact that there is an aspect of recreation in riddles as implied by word play, particularly to the Shona culture of Zimbabwe where solving a riddle is a source of great intellectual pleasure and pride. In fact riddles are played as a "word play game in which one child has the opportunity to challenge another or others of

his age” (Mawere, 2012: 55). This makes riddles a highly competitive game where the winner is the one who knows more riddles to ask than all others. As noted by Raun in Gelfand (1979), riddles have an educational value because their solutions depend on the child’s ability to provide a relevant answer to the posed riddle. Gelfand (1979: 13) concurs with this assertion when he aptly says:

... findings confirm that this method of instruction (riddles) is useful in forming the memory and reasoning powers of the child. In his attempt to solve the riddles, he has to consider different possibilities and probabilities and through repeated questioning, he comes to know many of what is happening around him.

To play riddles, a group of young children (from different families) come to gather around a ‘village story teller’ who is often an elderly and well respected person in that village. The leader can be a woman (grandmother/aunt) or a man (grandfather). Children are asked to form two groups, A and B, so as to encourage socialization and teamwork among children. One member of a group, say A, poses a riddle to the members of the opposite group, B. Any one from the opposite group (B) can make an attempt to answer the riddle. If they manage to answer it correctly, then group B has one point. Also, they take over to pose a riddle to members of Group A. But if members of group B fails to answer the riddle, then group A has a point. They provide an answer to the riddle and pose another riddle. This goes on until members of the opposite group manage to answer one such that they can lead. It should be remarked that riddles can also be played by only two people, but they play it in a similar manner as explicated above.

The riddles played range from those about natural phenomena, the human body, crops, and the zoological world to objects in general. What is important when playing riddles therefore is to think widely and deeply about the world around oneself so that they relate the riddle to their experiences of that world. For example the riddle ‘*Mai ndebvu baba ndebvu*’ (Both father and mother have beards) forces a child to think of objects and animals around him that have similar

features. The answer for this riddle is a goat because both the female and male goats have beards. Another riddle ‘*Nzira mbiri dzinokwira mugomo*’ (Two pathways leading to a mountain) can be given. The answer is ‘*mbuno*’ (nose) which has two openings that ascend to the upper “roof” of the mouth.

Therefore, in the traditional culture of the Shona people in Zimbabwe as elsewhere in Southern Africa, riddles are an important aspect of education that instils intellectual development of the young, and as such should be integrated in the current education curriculum. This is because like other concepts studied in education curriculum, they allow adults/and or teachers to test the knowledge of their children. Elders employ riddles to provide to their children the platform to reflect on their life settings and the challenges that the people face at a given time.

Tsoro (Draughts)

‘*Tsoro*’ is one of the most ancient African games played in Zimbabwe and many parts of Southern Africa (Mawere, 2012), though were also played in other parts of the world such as South America and East Asia. It is normally played by young boys and sometimes young girls and adult people. The game requires some high degree of intelligence and vigilance when playing it. In fact the players have to think quickly and clearly in order to outwit the opponent. This means that the game is meant to develop and sharpen the child’s intellectual faculty such that s/he grows up with the aptitude to manoeuvre different situations in real life. This is rightly captured by Masuku and Ndawi (in Pacey, 1999: 317) who pointed out that “African children’s games with stones such as ‘*tsoro*’ can be used to teach counting, number value, estimation and spatial relations”.

The game has several versions varying from region to region across the country. It is however played by a minimum of two people and the number of participants can be increased to three or four a side depending on the ‘*tsoro*’ version. Traditionally ‘*tsoro*’ is played with very simple objects, for example, hard *amarula* nuts, wild loquats seeds, gourd shells, sticks, corn cobs, stones dipped into six pairs of

small holes dug in the ground surface or in holes on the ground or beans on a cut wooden plate (Mawere, 2012). These days objects such as bottle tops are used to play some of the versions of '*tsoro*'. It is important to note that '*tsoro*', like riddles, is a very competitive game played by two (or more paired up) adversaries at a time with others watching as audiences. The result can either be a draw or a loss on either part. For example, the ultimate objective of the '*tsoro yemutatu*' (3 in a row) version is to be the first player to have three pieces in a row - to have a 3-in-a-row. One thus can be said to have won the game if s/he manages to create the 3-in-a-row or when the opponent no longer has an open space to move any of his three pieces. In the case of the other '*tsoro*' version, '*Tsoro yemugumi nembiri*', the idea is for a player to make sure that he maximizes his number of playing stones (*tsoro*) and minimize the number of playing stones (*tsoro*) of the opponent. This makes '*tsoro*' just like modern games such as chess a very effective and calculative game with a similar idea to the notion of competition in modern schools where in the name of quality enhancement students compete to be the best in their respective classes. It is in view of such educational values associated with *tsoro* that this chapter argues for the inclusion of such traditional games in the curriculum.

Dede Zengera Uyo Mutii? (Guess What Tree Is That)

This game or rather traditional education strategy was under the category of games to remember names. The game was to teach children about their bio-physical environment, and in particular to know and remember names of trees found in their geographical locations. In this game, children of the same age group gather at one point/locality, in most cases around an elderly knowledgeable person who has a wealthy knowledge of the environment. They take turns to sing the names of trees they know and remember. Once the leading child takes some time, for example, a few more seconds than is expected before remembering the name of any tree found in their locality, s/he is deemed to have failed. All the other participants simply count the number of trees s/he has remembered before the next child takes the lead. After everyone has participated, they would

check for the one with the highest number of trees. As previously highlighted, the one with the highest number of trees would be considered the winner for that round. One therefore wonders why such a traditional education strategy is not integrated in the present curricula in both the private and public education in the country.

Zvierwa (Taboos)

“Education” is not a new phenomenon in post-independence African countries. Neither is it a product of colonialism or the so-called western civilization. In pre-colonial Africa, education was always a common practice with taboos being one such strategy that was used to foster ‘good’ behaviour, conserve and sustainably exploit the natural resources. For scholars such as Tatira (2000), taboos were a useful way of keeping check on children. For him each taboo had two parts, namely, a ‘surface meaning’ (a lie) and the truth. In his words:

Shona people often use zvierwa (taboos) as one of the ways of teaching young members of their society. The Shona had, and still have, unique ways of transmitting social values which are crucial to the development of their society. Zvierwa, among other practices, encourage conformity (Tatira, 2000, p. 147).

This study goes beyond Tatira (2000) to argue that taboos were not only sanctions to correct behaviour of the young/, but also the adult about how they should conduct and behave themselves before others and the natural environment. I have also argued elsewhere that not all taboos had two parts i.e. a lie/surface meaning (which carried fear-inducing consequences) and the truth as Tatira argued, but there were true taboos and false taboos (see Mawere & Kadenge 2010). Gelfand (1979: 138) grouped taboos into six categories according to themes, namely, ‘those that talk about living in the correct way, successful pregnancy, avoidance of danger, good behaviour, healthy living, and those conveying religious teachings’. The subject of taboos as exemplified above by Gelfand and this chapter adds one more category that Gelfand left out. This is a group of taboos that were

meant to teach people good behaviour and to be at harmony with the natural environment and other sentient beings therein. Some of the taboos in this category are:

a). *Usatema kana kukwazha michero yesango* (Do not cut down or knock down unripe wild fruits). The consequence for violating this taboo was that the perpetrator will send ire to the ancestors who will in turn cause fruit trees not to bear fruits or the perpetrator will be chased by an 'invisible' ancestral lion (*mbondoro*). As Bourdillon (1987) rightly pointed out, 'Mbondoro' spirit is a revered Shona territorial spirit that is believed to have dominion over a very big area and whose anger can result in misfortune or even death of the perpetrator.

b). *Usaitira tsvina mutsime* (Do not excrete in a well). The consequence for violating this taboo was that the offender would find himself/herself bleeding while other members of the community may suffer from unknown ailments. Given that that everyone desires good healthy and that the consequence was undesirable, it meant that people were obliged to avoid undesirable characters that may result in ill health.

c). *Usauraya datya* (Do not kill a frog). The consequence was that the water reservoir i.e. a well, river or dam will dry up. In the Shona culture, it is considered cruelty to kill an animal you do not eat. In reality, some frogs are not eaten in the Shona culture and, so taboos such as this were to be put in place to protect the lives of such sentient beings.

d). *Usaraura mutsime* (Do not fish in a well). The consequence for violating this taboo was that the well could dry up, and possibly cause water pollution. Such a consequence was quite undesirable given that water is an indispensable resource for life sustenance and all other beings on earth. Perpetrators were severely punished once caught as the consequence was indeed a curse to the entire community.

e). *Usauraya haka* (Do not kill a pangolin). The consequence for violating this taboo was that ancestors would invoke a spell to befall the wrongdoer and your family. In reality, the pangolin has always been one of the rare species that were feared to become extinct if overexploited, hence this taboo was meant to safeguard them.

As has been shown above, all the taboos in this category and others that were identified by Gelfand (1979) were used as traditional education strategies meant to teach both the young and the adult people to be at peace with each other, the natural environment. All people (young and old), for example, were discouraged from harming the environment by way of pollution, deforestation or cutting down fruit trees, indiscriminate killing of creatures and over-exploitation of resources. Unfortunately, taboos are no longer respected in modern Zimbabwe as in many other African societies. Showing this neglect of indigenous knowledge, the Minister of Lands and Forests in Ghana is quoted in a keynote address on deforestation saying:

I am concerned about the apparent irretrievable submergence of own indigenous structures for the conservation of our natural resources.indigenous authorities and organisations made local rules to protect important water bodies, useful plants, watersheds and river courses. This is how our sacred groves, which today constitute the rare islands of biodiversity in the background of deforested countryside, were reserved. Indeed, agroforestry, which is now an accepted scientific practice, is an offshoot of indigenous trees management. It developed simply through the prohibition of exploitation of useful trees in the range and within farm systems. Lack of traditional control over the environment and the consequent relaxation of indigenous conservation regulations and laws have contributed, in no small measure, to today's environmental degradation (Asibey et al, 2000: 53).

This is a clear testimony that through the traditional education strategy of taboos, the Shona people of Zimbabwe always valued sustainable exploitation of their natural resources. , Hence, the strategy can play a positive role if integrated in the present education curriculum.

The encounter of traditional education with Western Education: A brief critique

With the advent of colonialism in Africa and the encounter of indigenous knowledge systems with globalization, many changes have occurred throughout Africa's form of education. In fact, the informal education with its traditional education strategy plays a less significant role to the mainstream education. Yet the refusal to integrate traditional education strategies (modified or otherwise) into the mainstream education had negative and detrimental effects to Africa and the African people as it resulted in the young Africans to, out of ignorance, shun and look down upon their own values. Besides, colonialism in Zimbabwe as in some other parts of Africa diverted the 'local' people's natural direction of educational, technological and scientific development. This diversion of Africa's educational, scientific and technological advancement is peculiarly evident and indeed had lasting negative impacts even on the education curricula of formally colonized countries such as Zimbabwe. Instead of African traditional education strategies being part of the whole education curriculum, they were despised, undermined and denounced in order to be forgotten once and for all (see Mawere, 2012). This has appeared as if those educational values that are Western are the only ones that can be considered global, scientific, universal and appropriate to teach the young. In view of this background, one can argue that all those educational values that come from other continents like Africa have therefore been undermined with their people forced either physically or by circumstances to discard the educational values that are legitimately theirs and adopt those that are Western or rather foreign. These postures are clearly not acceptable as they are tantamount to naturally putting those alleged to have propagated and propelled the current education curriculum at war with those forced to follow the curriculum even against their will, the so-called traditionalists.

Thinking about Local Education Strategies: The way forward

While African traditional education strategies have been marginalized at one point or another by ‘Western civilization’, it is worth noting that they have gained prominence in the recent years in many African countries. This prominence has been largely a result of the role indigenous knowledge systems (systems in which traditional education strategies are enshrined) have and are playing in the preservation of biodiversity and conservation of the natural environment, among many other roles. This is evidenced by the growing studies and/or literature on indigenous knowledge (Altieri 1995; Ocholla 2007; Mapara 2009; Mawere 2010, 2012). Yet while indigenous knowledge systems have recently been recognized as a form of knowledge, the education strategies embedded therein still do not enjoy the same status as they continue to be marginalised in the education curricula of many African countries such as Zimbabwe. This marginalization of traditional education strategies in education curricula raises a critical question: This question is somehow tricky as it begs yet another question: ‘Who gives those classifying knowledge as formal or indigenous the mandate to do so?’ In view of such questions, scholars such as Matose & Mukamuri (2002) have suggested that knowledge is constructed and classified in relation to history, culture, politics, economics, and more importantly, power relations. The argument that the duo is advancing is that those who are socially, economically and politically disadvantaged - the poor and powerless - are always forced to accept the knowledge of the rich and powerful as the most real and important of all forms of knowledge. The powerful rich thus assume the double role of being a player and an adjudicator, all in one, as they bestow upon themselves the mandate of acknowledging knowledge (Mawere, 2012) as formal, informal, real, scientific and worth learning or otherwise. Yet African solutions to African problems are a necessity to address the problems of knowledge. This means that the labelling of knowledge as ‘informal’ or ‘formal’ by the powerful rich should not continue influencing the credit and value attached to it as doing so is likely to

cause power struggles between knowledge forms and researchers with some knowledge forms purported as more superior to others.

Yet in education, issues of power should be separated with those of knowledge as those of the former have the tendency of dominating the latter if not separated. Financial constraints to adequately fund the educational system is the main challenge to address the issue of power and will remain so for as long as Zimbabwe depends on donor funding. This is because Zimbabwe, just like any other developing country in Africa and beyond relies on donor funding for most of its educational projects. As given by the Ministry of Education, Sports and Culture (2001), about 94 per cent of the government's allocation to the education systems goes towards paying salaries; only 4 per cent remains to fund development projects. This has catalysed the emergence in the education system of a curriculum that cultivates a mind-set of dogmatism and intolerance. However, with this poor funding, it may take ages for Zimbabwe to implement reforms that attempt to integrate traditional education strategies into the mainstream curriculum, improve academic achievement and proficiency, and quality education in general.

From the foregoing, this study argues for a rethinking of conventional wisdoms about a divide between what is considered 'formal' and 'informal', that is, the division between western based curriculum and alternative curriculum based on both the local education strategies the western ones; to push beyond simply selecting pieces of educational values that are either solely western or African, but both. The merit of this chapter thus does not only rest on its responsible critique and philosophical questioning of the dominant western based curriculum in Zimbabwe, but in suggesting that a reflection and serious consideration by policy makers and curriculum developers be made to ensure that traditional education strategies are integrated in the present curriculum. In fact, it makes children understand better the material and concepts they learn if they are made to think with the local strategies, values and concepts. This is similar to what scholars like Hadebe (1998) meant when he argues that 'there is need to blend traditional African wisdom with modern techniques because for a people to have control over its

present existence and its destiny, it has to know its past and especially establish some continuity with the best values of its history'. In view of this understanding, this chapter argues for an 'expanded curriculum' that is not bound to the formal-informal education divide. Such an approach takes the all-important step to open up discussion and conversations on what the current curriculum of Zimbabwe lacks, and to begin to track and trace a far worthwhile discussion on the interactive spaces between formal and informal education curricula in the country; to explore possibilities of thinking with local education strategies, rather than relying on the canons of western based education curriculum.

Conclusions

From the discussion above, it can be learnt from Zimbabwe's experiences that in many formerly colonized African countries, quality educational reform that recognizes the importance of local educational strategies is difficult to achieve. This is explained by effects in some countries such as Zimbabwe where their education systems have been caught up in a 'curriculum war' that has yielded 'catastrophic results' and resulted in a western biased curriculum. The war is between education policy makers and traditionalists who feel that the reforms that took place in Zimbabwe did not focus on local educational strategies. Indicators of quality educational reform in terms of the latter include exclusion in education curriculum of traditional education strategies such as riddles and folktales, among others.

More importantly, it has been argued that in Zimbabwe's education system, much attention in education reform was paid towards education values that are western at the expense of those that are local instead of seeking ways to harmonize and integrate values from both paradigms. In light of this weakness of the current Zimbabwean curriculum, this chapter has argued for the need to open up the discussion around education curriculum reform; to reconcile the western and African traditional education values in sustainable way; to foster a curriculum that acknowledges the damage

that foreign curriculum that does not seek 'to do difference' can possibly cause to the entire country. In short the chapter argues for a curriculum which is not framed in suspicion and which is open and hospitable. This argument has been made in the context that the colonial education system was highly selective and rather unaccommodating. This means that the standards and quality of a colonial educational system can never be appropriate for a postcolonial system where the government believes in 'decolonizing' the mind of a people who were once subjugated and disadvantaged. Yet throughout the chapter, the researcher has called for the need to clarify the necessity to confront conflict and suspicion and for an open, tolerant curriculum where neither side is only fixated on a denunciation of other educational values but where different education values recognize the vitalities in each other's positions.

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Enhancing quality in the teaching and learning of English in Mozambique's Public Education: Lessons from the past and current experiences

Munyaradzi Mawere

Abstract

In Mozambique, the English subject has been implemented in public education, particularly in the primary education (second grade-EP2)-grade 6 and 7- and secondary schools (grade 8-12). This was done to meet the growing demand for the professional use of the global language of power, English. The political economy of Mozambique as a Portuguese colony for almost five hundred years (1505-1975) is therefore deeply implicated in discourses on the appropriateness of Portuguese as a language of engagement among Mozambican people in different ways. However, continued use of Portuguese as the official language after independence in 1975, for example, meant that the country would remain isolated from the English world for as long as Portuguese is the dominant language. It is against this background that the learning and teaching of English in Mozambique has been a mammoth task since its implementation in school curriculum in 1992. This study examines the difficulties encountered by both Mozambican teachers and students in the teaching/learning of English in public schools. The research, which was conducted at selected schools in Gaza province employed semi-structured questionnaire as a data collection tool. Frequency tables were used to qualitatively analyse and provide evaluative descriptions of the findings. Findings suggest that scarcity of qualified teachers coupled with lack of relevant materials (like English textbooks) were among the major problems that made the teaching and learning of English a challenge in the Mozambique's public education. The study submits

as one of its recommendations that qualified teachers should be deployed in Mozambican schools to replace and/or further train those currently holding English teaching positions if quality is to be improved.

Introduction

Among the most spoken languages in the world are 10 languages named in their order: Marandian, English, Spanish, Hindu/Urdu, Russian, Arabic, Bengali, Portuguese, Malay-Indonesian and French (Abbas, 2010). At global level, and in particular Africa, English is fast becoming the most spoken and an official language for many countries. Weber (1997) echoes this in terms of the number of countries where each of the ten languages mentioned above is spoken with English being the most spoken language followed by French. More so, in Southern African region, many countries except Mozambique (and South Africa and Namibia which use Afrikaans in some of their schools) use English as their official language in schools, job markets and sometimes at home. Mozambique is the only country in the region that uses Portuguese as its official language in public schools and job markets. Consequently, Mozambique has often experienced subtle forms of exclusion in terms of trading, working with some English speaking donors, tourism, exchange of educational resources and in participation in regional and global politics, only to mention a few examples of cases of isolation.

Having experienced these challenges, after its independence from Portugal and the civil war that ended in 1992, Mozambique took a bold step to introduce English as one of the subjects taught in public schools, of course, along with Portuguese. This intervention was challenging in light of the country's crippling poverty levels, lack of adequate training for English teachers, and the country's unfortunate long period (almost five hundred years) of domination by the Portuguese people.

Yet, although the problem of English in public education is ubiquitous and widely known by Mozambicans and other scholars beyond Mozambique's borders, there has been paucity of research,

particularly on the problems encountered in the teaching and learning of the subject (English) in the curriculum. This is because while indigenous/local languages are as important as any other language in the world, it is important to acknowledge that English is increasingly becoming the most widely spoken language in business, education, political gatherings, job markets and many other arenas the world over. As such, it is now a necessity, whether like it or not, for non-English speaking people to acquire knowledge of English if they are to be able to “operate well” in the global world. In fact having taught in Mozambique’s public university and schools, and researched extensively on Mozambique’s educational issues in the past few years, I have come to the realization that most researchers on Mozambican education (Mario 2002; Mario & Nandja 2006; Mulkeen 2005; Chaudhury et al 2006) have paid insignificant attention to the problems of effectiveness and quality in general, and in particular those that both the English teacher and student face in their teaching and learning of English heretofore referred to as subject

That said, this study examines the problems encountered by Mozambique’s public education in the implementation of English in the curriculum. In particular, the study focuses on the problems that both teachers and students of English are facing in the teaching and learning of the subject, problems that indeed affect quality in the teaching of the subject. It is acknowledged that this important project should have covered the entire country (Mozambique) in order to capture the status and teaching of English as a subject in all public schools in the country. However, due to limited resources, this was rendered impossible. As such, the study adopts Gaza province as a case study, to represent other provinces in the country.

Background to Mozambique’s public education and the teaching-learning of English

Mozambique is one of the countries with both sad histories and a plethora of systems too complex to characterise with precision. Their complexity is predicated, on the country’s long tumultuous history under the Portuguese dominance, sixteen years of civil war after

independence from Portugal in 1975, crippling poverty levels, rising levels of unemployment, lack of adequate training and limited deployment of public personnel to underserved communities, and adoption of Portuguese as an official language after independence. The complexities of Mozambique's systems are not only visible in the country's economic and political systems, but in social landscapes such as education. In view of the latter (education), Mario (2002) has aptly developed taxonomy of the literacy development trajectory that seems to be a prototype of the landmark political developments as they impacted the Mozambican education sector. The taxonomy comprises the period of national reconstruction, marked by the growth of adult education nationally (after national independence in 1975–mid 1980s), the reduction in adult literacy and the disbanding of national adult training institutions due to civil war (1977–1995), and the period of rediscovery of an adult education system that emphasizes sustainable development and gender equity in a post-conflict state (1995 to the present).

From the foregoing, it is clear that the literacy landscape of Mozambican educational system has generally been split into distinguishable phases although there is little consensus on what each of these historic epochs actually constitutes. Mario and Nandja (2006), for example, identify three main phases that summarize the Mozambican education provision and system as (see also Rambe & Mawere, 2011):

1. *Reconstruction* phase (1975–mid 1980s) – this immediate post-independence phase was characterized by the national reconstruction project and the building of a coherent adult education infrastructure (adult education and training schemes) to support adult literacy and education campaigns nationwide.

2. *Destabilization* phase (mid 1980s–1995) – was characterized by internal instability accentuated by civil war insurgences that destabilized the existing adult literacy and educational activities in the country. This phase was marked by human emigration to neighbouring war-free zones, destruction of academic infrastructure,

the scaling down of literacy efforts and adult literacy programs in the rural areas and the disbanding of National Adult Education Department.

3. *Resuscitation phase* (1995 to date) has emphasised the re-emergence of the adult literacy initiatives and education in the context of social and economic development with a focus on the use of education as a vehicle for poverty eradication, national unity, and providing the population with moral values and social empowerment.

It should be emphasized that while English was introduced in the early 1990s, particularly in Mozambique's public secondary schools (grade 8), this phase falls in *resuscitation phase*, and not in Mario and Nandja's (2006) phase 2. This is because the introduction of English in Mozambique's public education was mainly done with the objective to eradicate poverty and to do away with the country's isolation in the region and the global world, particularly where English is used as a professional language. English was believed to be a vehicle of change that would improve the country's relations with the global world, open avenues for Mozambicans to the global job market and to actively participate in tourism, educational and political participation (Weber, 1997). Owing to this realisation by the Mozambican government, there has been a series of national interventions (such as those explained by Mario & Nandja above) especially after independence, aimed to improve education system in the country. These intervention include the 'political will' of the national government to have the English subject not only included in the public education curriculum, but to have the quality of its teaching-learning exercise enhanced.

However, while there have been a series of national interventions as those in Mario and Nandja's (2006) phases 1 and 2 above aimed at supporting the education systems, especially in terms of teachers' training and the alleviation of their economic status to expedite pedagogical delivery, it should be noted that the education sector has remained poorly remunerated in almost all respects. For example, the education system, especially on newly introduced subjects like

English has remained with a critical shortage of resources such as textbooks, classrooms and qualified teachers (see Rambe and Mawere, 2011). This is mainly because sometimes these resources need to be acquired from outside the country or are costly for the government to acquire. On the other hand, teacher wages are generally not typically fully responsive to local labour market conditions or to individual characteristics, resulting in many teachers receive substantial rents (Chaudhury, et al 2006) in the form of illegal private tutoring to supplement their incomes. As noted by Rambe & Mawere (2011), such transactions as rent seeking can be two-way; where a teacher corrupts a student by demanding a bribe or the student/parents offer bribes to educators to secure students' progression to another grade or pass an exam, thus compromising and diluting professional integrity and educational effectiveness and quality, in this case, in the teaching and learning of English. Rent seeking behaviour which indeed erodes commitment to professional instruction can be partly explained by abject poverty in the country. Mozambique has high levels of poverty (54.1% in 2008) and child (0-59 months) malnutrition (46.2% in 2004) and currently facing escalating staple food prices (US Government Report, 2009). This is further compounded by differential levels of educator training across the country. For example, rural and outlying areas often have less access to educator development and support services than their urban counterparts, and fewer opportunities to attend in-service courses, which lead to lower quality education provision (Mulkeen, 2005).

The brief background to the Mozambican educational landscape articulated above sets the stage for my informed analysis and critique of the nation's schooling in general and the quality of teaching-learning of English in particular.

Research question and methodological issues

Findings presented in this research are based on the data that were collected from participants in Gaza province over a period of time, particularly from 2010 to 2011. As previously noted, the

objective was to obtain comprehensive information about the problems faced by the Mozambican schools, particularly teachers and students in their teaching and learning of English as subject. An additional objective was to explore possible solutions to the problem from the directly affected people.

The study seeks to address the question: What is the implication for quality educational delivery and teaching of a foreign language, English?

As part of my research design, I relied on observations, and in particular lesson observations of some English teachers in public schools), questionnaires and in-depth interviews (formal and informal). I carried out my study with ten schools (6 secondary schools and 4 primary schools) in Gaza province in Mozambique between February and November 2010, and I sampled education stakeholders, that is, students, parents and teachers in the study area. In choosing participants for the research, I made sure that each cluster in the province is represented. A cluster is normally made up of 5-7 schools. The study involved a selected sample of 100 people (70 students, 20 English teachers and 10 parents/guardians). I locate my study within Gaza province, in particular students, teachers and parents affected.

As previously pointed out, unstructured interviews are among the data collection techniques used in this study. The respondents were interviewed at the places they were found by the researcher. Generally speaking, interviews entail presenting questions to the informant orally and recording the responses either in written notes in pocket books or on an audio-recording for later transcription and analysis. Wray and Bloomer (2006), articulate that any subjects can be used provided they are able to understand the questions and provide responses. In framing questions for the in-depth interviews, I was guided by the works of Hofstee. According to Hofstee (2006: 135), “background type questions are important when carrying out in-depth interviews and it is also important to keep the interviewee to the topic being discussed, but it can also pay not to be too rigid”. One of the advantages of in-depth interviews is that the interviewee may even give you more than what you will have bargained for.

However, as Hofstee (2006: 136) observed, “if not carefully administered, interviews can produce misleading responses, thereby affecting results”. To avoid this problem, the researcher asked the participants short questions, most of which required one word answers. The aim of interviews was to complement and substantiate data collected from questioners and lesson observations. It must be emphasized that a wealth and elaborate explanation of respondents’ views and opinions on problems affecting teachers and students in their teaching and learning of English at school can best be acquired through a combination of all the methods mentioned above (lesson observations, interviews and questioners).

In interviewing the voluntary participants: both individual and group interviews were used. The use of individual and group interview as well as lesson observations and questioners was suitable for the gathering of comprehensible information on the problems faced by teachers and students in the teaching and learning of English in public schools.

The people participated in the study were drawn from different societal classes, ranging from students, educators and parents/guardians. The participants were drawn from different societal classes with the hope for obtaining a balanced research result that could be representative of all the parties that directly affected and involved in the teaching and learning of English in Mozambique’s publication. Participants ranged from the ages of 11 to 65 years. This age group was considered appropriate for the study given that most of the people involved in the teaching and learning of English in Mozambican schools are between the aforesaid ranges. Equal number of women and men were sampled to ensure that gender balance, in terms of representation, was maintained. More so, it is generally believed the problems faced in the teaching and learning of English in public education equally affect both sexes.

In using questionnaires, the researcher administered these (questionnaires) to the participants in the different areas they were found. In this study, the questionnaires consisted of limited open-ended (free response) questions and closed-ended (fixed alternative) questions. This was in agreement with the CACC Module (1989: 103)

which states that “practically a good questionnaire should contain both open-ended and closed-ended questions so that the responses from the two forms can be checked and compared”. The open questionnaire was used as it enables the respondent to reply as s/he likes and does not confine the latter to a single alternative (Behr, 1988). This is to say the advantages of open-ended or free response questions are that they give a respondent an opportunity to answer sufficiently, giving all the details to clarify the answers. Put differently, open-ended questions are more suitable for complex questions or issues that cannot be elaborated in closed-ended questions. This was in agreement with White’s (2005:131) view that “open-ended questions probe deeper than the closed question and evoke fuller and deeper responses”.

More so, the researcher observed some of the 40 minutes English teachers’ lessons in their respective schools. This was done with the hope to obtain first-hand information on methodologies being used by English teachers, materials/resources available to teachers and students and the general interaction between teachers and students during English lessons. Data collected from lesson observations, questionnaires and in-depth interviews were tabulated to show frequencies before being subjected to evaluative analysis. The Tables 1 and 2 respectively contain details of the people participated in the study and the data that was gathered during the study:

Table 1: Participant demographics

Occupation/S tatus	Age range	Gender	
		Male	Female
Teachers	20-60	10	10
Parents/guard ians	32-65	5	5
Students	11-20	35	35

Table 2: Responses to closed questionnaire items on problems faced in the teaching and learning of English in Mozambique’s public schools

ITEM	RESPONSES		
	Agree	Disagree	Uncertain
1. Reading, writing, speaking and listening are skills that teachers should teach their students.	100	0	0
2. Most of the students have problems in grammar, reading and speaking.	90	5	0
3. English songs, films, stories, group work and homework help students in the learning of English.	90	5	0
4. Scarcity of primary educational material contributes greatly to poor performance of students studying English.	98	1	1
5. Some English teachers in Mozambican schools are under-qualified to teach the subject.	85	10	5
6. Very few English teachers make use of the local community (i.e. friends) in improving performance of their students.	90	8	2
7. Some teachers are forced by their superiors to teach English instead of subjects they studied at college/university.	60	10	40
8. English workshops are often (annually) held to improve teachers' skills.	0	75	25
9. Most of the teachers use either local language or Portuguese to teach English.	91	7	2
10. Most of the students like to learn English.	65	15	20
11. Text books being used in schools are unsuitable and should continue being used.	40	50	10
12. Students have the opportunity to use English outside school.	9	90	1
13. Some teachers do not plan for their lessons and rarely use teaching aids such as charts, black board and physical objects.	65	15	20
14. Teachers always revise homework and exercises given in class with their students.	50	47	3
15. Most of the students think that English is less important to other subjects studied at school.	60	20	20

Discussion of Findings

The research results in Table 2 above show different perceptions of participants on problems being faced in the teaching and learning of English in Mozambique's public education. The main problem faced by both students and teachers of English in Gaza province is scarcity of primary educational material. According to majority of the participants (98 %), the main reasons for the scarcity of secondary material are poverty and economic hardships as well as shortage of local experts to write textbooks in the area of English.

Due to poverty and economic hardships, schools and parents cannot raise the required money for textbooks to use at school and home respectively. In fact, where educational budgets for teacher training are limited, there will be limited primary educational resources (books, periodicals and journals are outdated) and weak supervision of teaching personnel. In such educational contexts, weak literacy practices persist and students' capacity to dissect texts for hidden meanings will be severely compromised (see Rambe & Mawere 2011). This is echoed by Mulkeen (2005) who reports that in Mozambique teacher deployment is done at the provincial level but provinces often have insufficient funds to recruit all of the newly qualified teachers and this leads to high teacher-student ratios. This also leads to under-staffing in some isolated areas. Worse still, the prolonged Portuguese domination resulted in very few Mozambicans specializing in English. Consequently, there are very few Mozambican teachers capable of teaching and of producing English textbooks that can be used in schools. Unfortunately, this study revealed that rarely are such workshops conducted in Gaza, a signal that delivery problems will persist in as long as no action is taken.

The other serious problem cited by majority of the respondents (85%), was that of under-qualified teachers who are employed/hired by the Ministry of Education and Culture to teach the English in public schools. This negatively impact on the learners' psychological access to learning resources. This in turn compromises the quality of education and in particular of students produced from such a system. As Rambe & Mawere (2011: 46) argue "structural dysfunctions such

as corrupt practices (demanding bribes from students to pass exams/tests, appointments influenced by rent seeking behaviour, teacher absenteeism, poor instruction) in the education sector frustrate the delivery of quality learning outcomes”. I therefore argue that for impoverished Mozambican students, most of whom coming from deprived backgrounds, their capacity to grasp the fundamental assumptions underpinning dominant discourses in the learning of English is constrained by the quality of the instructors they encounter in the classroom. In most cases, this often results in bribes from students (especially those from middle class families) who after realizing the impossibility to master the subject with the calibre of teachers they have in their schools would simply preoccupy themselves with passing on to the next grade/level. On the other hand, under-qualified teachers tend to privilege middle class learners because in an educational system where educators are under-qualified, educators are motivated to “pass” their students by the pursuit of rents and underhand deals rather than motivating students and supporting access to quality education. The problem was aptly captured in the sentiments by one of the respondents who had this to say:

Para pasar esa disciplina de ingles e' preciso pagar proque e' dificil. Assim, os que vem das familiares pobres sofrem por nao ter dinheiro para corromper os professores (You need to pay to pass this difficult subject, English. But then, those from poor backgrounds suffer for they don't have money to corrupt the teachers).

The above assertion by one of the respondents connotes that students from humble background, even those who are intellectually gifted, are deprived both of “epistemological access” (Morrow 1994) to resources and opportunities to embrace diversity and fully exploit their capacities in their learning endeavours.

From the results obtained during this study, it was also revealed by the majority of the participants (91 %) that most of the teachers use either local language (Changani) or Portuguese as a language of instruction in conducting/delivering their English lessons. Speaking

local languages or Portuguese is not wrong per se as to argue otherwise could be interpreted to mean discrediting these languages. However, it can be argued that teaching English using a local language or Portuguese deprives the student of the opportunity to be exposed to the language s/he is learning. As a matter of consequence, students hardly learn the speaking and listening skills of English. To confirm this, the present study together with my vast personal teaching experience in Gaza revealed that majority (90 %) of the students struggle with grammar, reading and speaking. As a result of these deficiencies, a majority of the students get up to grade twelve before acquiring the necessary skills required to master the subject. This further limits the students' competency in the job market and in their choice of the place to pursue tertiary education after high school. This problem was put to light by one of the respondents, a grade 12 graduate, who had this to say:

O problema aqui em Moçambique tem ver com maneiras que nos aprendemos ingles. A pessoa assim como eu completa decimal segunda sem saber ler e escrever em ingles. Assim mesmo com dinheiro e' difícil apanhar vagas para estudar fora do pais ali falam ingles (The problem here in Moçambique emanates from the way English is taught in schools. Most students complete grade 12 before acquiring reading and writing skills-just like what I did. Against this background, it is difficult to secure a place to study outside the country especially in the neighbouring ones where English is used as a language of instruction in schools).

As indicated by one of the respondents, due to language problems, those who want go straight to tertiary education or into the job market are restricted to the local institutions and/or markets and to those in the few Portuguese speaking countries such as Brazil, Portugal, Congo and Cabo Verde.

Other problems that were cited as contributing to poor performance of students studying English include teachers' reluctance to revise homework and exercises with their students (50 %), misconception in some students that English is not equally important as other subjects in the curriculum (60 %), poor lesson

planning by some English teachers (65 %), old and sometimes outdated textbooks with grammatical errors (40 %), and student's lack of exposure to English speaking environment outside class. In the case of the latter, 90% of the respondents agreed that the Mozambican students lack the opportunity to practice what they learn at school as the home institution uses either Portuguese or the local language most of the time.

Recommendations

This study sought an in-depth understanding of education stakeholders' (students, guardians/parents and English teachers) perceptions on the problems encountered by both teachers and students in their teaching and learning of the subject, and how those problems affect quality of learning and teaching of English in the country. From data obtained, the study concluded that both teachers and students in public education are experiencing serious problems in their teaching/learning of English. As previously noted, one should note however that some steps like introducing English in the 2nd Grade primary education (EP2), that is, grade 6 and 7 have been taken by the Ministry of Education and Culture. I however argue that this step can hardly yield significant results as have been evidenced by data obtained during this study. In fact, even with the introduction of English at EP2 level, it was revealed that majority of the students (of those participated in this study) who started learning English in that level (EP2) get up to their Advanced level (Grade 12) still struggling to master the subject. In view of this observation, I recommend that the Ministry of Education seriously consider introducing the subject in earlier grades, particularly at grade one level. Such a measure is most likely to have a positive impact on the part of the students as they will be exposed to the subject at an earlier stage and for a longer period. This is the situation with Portuguese language in Mozambique's public education and most of the students do not have problems in learning the subject (Portuguese). This is confirmed by Instituto Nacional do Estatística (2007) which reported that the official and most widely spoken language of Mozambique is

Portuguese, spoken by more than 50% of the population, majority of who are students.

Also, from data obtained it was apparent that in Mozambique's public education most of the English teachers are either under-qualified (85 %) or forced by their superiors (60 %) to teach the subject even if it is outside their area of specialization. This is mainly because of lack of qualified teachers in the country (Rambe & Mawere, 2011) to teach English in public schools. From that said, it appears more convincing in the context of Mozambique to recommend that the country invest in teacher training and hire qualified teachers from neighbouring countries such as Tanzania, South Africa, Zimbabwe and Malawi to boost English teaching and learning. As part of teacher training, the Ministry of Education and Culture can conduct semester workshops for English teachers in their respective provinces to ensure that teachers are constantly equipped with the necessary English teaching skills. Or alternatively, collaborative teaching between English teachers in urban areas (where there are more teachers with expertise in English) and rural areas (where there are fewer English teachers) can be promoted to ease the problem. Such measures are important. Critical and reflective perspectives as well as drawing from my professional experience in Mozambique, show that poorly qualified teachers will always compromise the quality of education and in particular that of the products (students) in the country.

In addition to the two recommendations given above, I propose close collaboration between education stakeholders (students, guardian/parents and teachers) to ensure students commitment, hardworking and the development of self-discipline. This is to say that even if English is to be introduced at a lower level (grade one) and qualified teachers are provided, quality education that embraces ethical practices and high levels of comprehension of students in a fragile post-conflict landscape such as that of Mozambique can only be achieved if all stakeholders work together as a team. This will help to foster quality teaching-learning as it promotes high level of comprehension of English as a subject.

Conclusion

The arguments and recommendations I have offered in this study have been primarily drawn from data obtained during research and my professional development journey, personal reflections and experiences as a researcher and educator in Mozambique. Statistics have shown that majority (85 %) of the respondents agree that English teaching in Mozambican schools is poor as some teachers are under-qualified to teach the subject. An even larger percentage (90 %) reported that most of the teachers use either local language or Portuguese to teach English which in turn limits the learner's participation and exposure to the subject. It therefore appears that the call for qualified teachers in Mozambican schools to replace and further train those currently holding these positions is a worth considering recommendation.

More important as part of conclusion to this study is the observation that while it is widely acknowledged that the teaching and learning of English in Mozambique still desires more to be done, there are divergent opinions and there is no consensus as to what exactly should be done to improve quality learning and teaching of the subject. Another impetus for divergent perceptions is predicated on the disagreement on whether English language teaching should be prioritized at the expense of local or "indigenous" languages or accorded the same status as other school subjects. Majority (60%) of the respondents for example reported that most students think that English is less important to other subjects studied at school. Yet the fact that not all respondents participated in the present study subscribed to the same view on what exactly should be done on the question of English teaching and learning in Mozambican schools illustrates the complexity of the issue at hand. Overall, the teaching and learning of English in Mozambican schools remain an issue deserving further serious research in all corners of the country in order to identify the best possible course of action to take.

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How The Reluctance To Use Corporal Punishment In Public Schools Has Affected Mozambique's Education System: Voices From Education Stakeholders

Munyaradzi Mawere

Abstract

Corporal punishment in schools has been heavily debated in education studies in both developing and the developed worlds. While a significant number of studies have been conducted on this subject, most of them have emphasised the protection of children from all forms of physical and/or mental violence, injury or abuse perpetrated against them. Insignificant attention has been paid to the perceptions of some important education stakeholders such as parents and educators, of impacts of banning or relaxation in the use of corporal punishment on educational quality and quality education delivery. While the issue of corporal punishment is inexorably complex to address in its entirety in just one chapter and has been examined by many researchers, it remains a subject worthy of further interrogation particularly in culturally diverse, historically fragile (or even tumultuous) educational milieus like that of Mozambique. This study examines the effects of a reluctance to use corporal punishment on schools in Gaza province in Mozambique. Interviews and questionnaires were administered to one hundred education stakeholders (students, teachers and parents/guardians) from Gaza province. The study revealed that the majority of the respondents argued that a reluctance to use corporal punishment in schools has compromised the quality of education in the country. Respondents however expressed the role of the institution in institution in its regulation to avoid abuses.

Introduction

The question of whether corporal punishment should be used as a tool to discipline students in public schools, has garnered considerable international attention since the dawn of the new millennium (Harvard Mental Health Letter 2002; Committee on the Rights of the Child (CRC) 2002; Tharps 2003; Save the Children Sweden-Mozambique 2009; Cleyinhas 2010). The question has been addressed by educators, legislators, students, national governments and the public in both developing and developed countries and a number of different interpretations and responses have been offered (Tharps 2003; Cleyinhas 2010).

The nebulous nature of corporal punishment coupled with the different interpretations evoked by its deployment across different situations and/or settings necessitates a robust comprehension of the concept and calls into question its practical manifestations and application in particular situated contexts such as educational settings. At another level, the tenuous nature of corporal punishment makes it both a cultural and, in part, legislative phenomenon. It constitutes a cultural phenomenon because of its evolution within the broader social milieu of many societies/cultures the world. It has legislative connotations/due to codification in law of its consequences and impacts. While pressure groups and humanitarian organisations such as Save the Children and United Nations Children Education Fund (UNICEF) initially lobbied for a ban of corporal punishment to protect prisoners and domestic workers, their strenuous efforts have recently been extended to include children at school and even at home. The demands have generated a storm of controversy and met with a great deal of resistance, not only from educators but from the general public as well. Divergent views and the tenuous nature of corporal punishment have caused many countries to delay or avoid its abolishment, and in some countries such as South Africa, although corporal punishment has been abolished it still goes on unabated with the lighter sentences passed on offenders. Likewise, some of the countries that have ratified the UN Convention on the Rights of the Child (CRC) remain uncertain as to whether they should also enact

national laws against corporal punishment in their schools. Mozambique, a signatory of The United Nations' Convention on the Rights of the Child (CRC), is presently considering national legislation that would ban corporal punishment in schools. Corporal punishment has been illegal in the country since 1994 when Mozambique ratified the Convention. The first move towards the implementation of the CRC did not come until 2002, when the CRC Committee requested that the country prohibit by law the use of corporal punishment in schools, care institutions and the family (Committee on the Rights of the Child-Mozambique, 2002). The Committee also requested that Mozambique reinforce public awareness campaigns to promote positive, participatory, non-violent forms of discipline as an alternative to corporal punishment at all levels of society. Although government directives have or discouraged it and addressed in the National Action Plan for Children since 2002, Mozambique has no explicit law that bans the administering of this form of discipline.

The Committee on the Rights of the Child (CRC), the highest international authority for interpreting and monitoring violations of children's human rights has interpreted the Convention to mean that all forms of corporal punishment of children, in the family, schools or other institutions, contradict the CRC. As such, the Committee has asked national governments to undertake comprehensive law reforms to prohibit all forms of corporal punishment. The Committee has also proposed that legal reforms be coupled with awareness-raising and education campaigns on positive discipline to support parents, teachers and others. States that have ratified the CRC have to submit reports to the Committee describing their implementation of the Convention (Committee on the Rights of the Child, 1989, No. 8; 2002).

While the issue of corporal punishment has been topical for some time now, and is inexorably complex to address in its entirety just one chapter, it is worthy of further interrogation particularly in culturally diverse, historically fragile (or even tumultuous) educational milieus like that of Mozambique. This study examines the impact of relaxing or even banning corporal punishment in public schools in terms of

education quality achieved thereafter. This study adopts Mozambique, and in particular some selected schools in Gaza province, as a case study. Given that Mozambique has relaxed the use of corporal punishment in public schools but has not banned the punishment, the impacts of this relaxation can offer important insights into the dilemmas faced by other countries in similar circumstances.

In the light of the above, the main goal of this study is to ascertain whether corporal punishment is useful, especially as a strategy to administer discipline in schools albeit improving students' on-task behaviour in public education system. Acknowledging the complexity and dimensionality of the problem at hand, this study seeks to find answers to the controversial question of corporal punishment against children in public education in Mozambique.

Conceptual analysis of corporal punishment

Corporal punishment has long aroused the interest and opinions of academics, students, legislators and the public in general (Tharps 2003). The many and diverse players tussling with various aspects of this controversial subject has resulted in a number of different interpretations of the term being conjured (Cohen 1984; Hyman 1990; Straus 1994; Harvard Mental Health Letter 2002; Committee on the Rights of the Child (CRC) 2002; Tharps 2003; Save the Children Sweden-Mozambique 2009). The porous discourses around corporal punishment are thus often implicated in the spectrum between traditional mainstream forms of punishment, a move to uphold human rights by pressure groups and humanitarian organizations, and the nebulous nature of the concept coupled with its manifold interpretations and constructions. In terms of the latter, Cohen (1984), for example, identifies specific forms of corporal punishment such as paddling, floggings and beatings. For Hyman (1990: 10), “[c]orporal punishment in the schools is the infliction of pain or confinement as a penalty for an offense committed by a student”. For Straus (1994), whose definition is similar to that of Hyman (1990), corporal punishment “is the use of physical force

with the intention of causing a child to experience pain but not injury for the purposes of correction or control of the child's behaviour" (p.4). The UN Committee on the Rights of the Child, has defined "corporal" or "physical" punishment as "any punishment in which physical force is used and intended to cause some degree of pain or discomfort, however light" (United Nations' Convention on the Rights of the Child, 1989). Save the Children-Mozambique (2010), offers a definition of corporal punishment that reveals sympathy for the victims of the punishment:

Most corporal punishment involves hitting ("smacking", "slapping", "spanking") learners, with the hand or with an implement - a whip, stick, belt, shoe, wooden spoon, etc. But it can also involve, for example, kicking, shaking or throwing children, scratching, pinching, biting, pulling hair or boxing ears, forcing children to stay in uncomfortable positions, burning, scolding or forced ingestion (for example, washing children's mouths out with soap or forcing them to swallow hot spices). In the Committee's view, corporal punishment is invariably degrading.

All of the above definitions, though varying in semantics, are more or less similar in so far as they stress that corporal punishment is instituted to inflict pain or discomfort on the part of the offender. What is missed by, or needs to be emphasised in all these definitions, perhaps is that, corporal punishment is not only administered to cause pain or discomfort, but with the motive to correct (if administered correctly) bad behaviour and deter potential offenders. This last point, though might be controversial, is of particular significance since it is the abuse of corporal punishment by some educators that compromises its impact and legitimacy as an educational tool. Likewise, it is the incorrect use of corporal punishment by some educators that pressure groups have used to lobby for the full ban of this type of punishment. In light of this understanding and for purposes of this research, corporal punishment shall refer to any properly administered punishment in which physical force is used with the intention to correct undesirable behaviour and deter potential offenders by causing some degree of

pain or discomfort on the part of the offender (child). This definition has the merit that it clearly distinguishes corporal punishment from other inhumane practices such as torture which do not only inflict “unbearable” pain but cause injury/wounds on the body of the victim.

Background: Corporal punishment in Mozambique

Mozambique, like many other countries such as Zimbabwe, has no specific national legislation that prohibits the corporal punishment of children in public education. However, in 1994 Mozambique ratified the United Nations Convention on the Rights of the Child (CRC). The CRC is an international convention, which covers the specific rights of children under the age of 18 years (United Nations General Assembly, 1989). As Cleyinhas (2010) reports: all countries in the world except the United States of America and Somalia have ratified the CRC. By ratifying the CRC, countries are bound by the stipulations and obligations set out in the CRC in their respective countries. According to CRC Article 19, all children below the age of 18 must be protected from all forms of physical and mental violence. The Article requires all signatories to take:

“... all appropriate legislative, administrative, social and educational measures to protect the child from all forms of physical or mental violence, injury or abuse, neglect or negligent treatment, maltreatment or exploitation including sexual abuse, while in the care of parent(s), legal guardian(s) or any other person who has the care of the child”. Furthermore, Article 37(a) provides that, “...no child shall be subjected to torture or other cruel, inhuman or degrading treatment or punishment. Neither capital punishment nor life imprisonment without possibility of release shall be imposed for offences committed by persons below 18 years of age”.

There are other CRC Articles that emphasize the importance of protecting children from corporal and other forms of humiliating and degrading punishment. These include (1) Article 3: the best interests of the child shall be a primary consideration in all actions concerning

children, (2) Article 6: states must ensure to the maximum extent possible the survival and development of the child, and (3) Article 28: states must take all appropriate measures to ensure that school discipline is administered in a manner consistent with the child's human dignity and in conformity with the present Convention.

Although Mozambique has not yet enacted laws to prohibit corporal punishment in public education, by virtue of being a CRC member it is obliged to abide by all Convention policies. The Committee on the Rights of the Child, has interpreted the Convention to mean that all forms of corporal punishment of children are in contradiction with the CRC, be it in the family, in schools, or in other institutions. As such, the Committee requires all signatories to enact comprehensive legislative reforms that prohibit all forms of corporal punishment.

With this gesture, Mozambican teachers found themselves in a very difficult situation bad habits die hard. Some were prosecuted, for the first time in the country's history, for administering corporal punishment. In 2003, for example, only a year after the CRC Committee CRC requested that Mozambique prohibit the use of corporal punishment by law, a teacher in Inhambane province was detained for beating his student. According to the Africa News Service (23/03/2003), hundreds of students demonstrated in the streets to protest the detention of this teacher. The teacher was detained for more than a week for administering corporal punishment on a pupil, 13 year old, the nephew of the Provincial Governor. This protest for the release of Bernardo suggests that even some students support corporal punishment in spite of Mozambique's CRC-related reluctance towards the administration of it.

Research question and methodological Issues

This chapter addresses the question: "To what extent has the relaxing of corporal punishment has either improved or compromised the quality of education in Mozambique?" This inevitable question indeed begs for a genuine answer and it is hoped

that the results of such a research as this will help to address the question while simultaneously inform Mozambique's educational policy .

The findings presented in this study are based on data collected from education stakeholders in Gaza province, Mozambique over a period of about a year. As mentioned, data was gathered using questionnaires and interviews. The objective of using both techniques was to obtain as comprehensive information as possible about how people view the use (or otherwise) of corporal punishment in public education. An additional objective was to explore possible solutions to problems associated with corporal punishment in secondary schools in Mozambique from the "actual people" (James, 2004), that is, those that are affected, directly or otherwise.

The research design for this study involved questionnaires and in-depth interviews administered by the researcher in Gaza Province, Mozambique between September 2009 and August 2010. One hundred participants, including secondary school students, parents/guardians and teachers in the study area were sampled. The study sample was thus comprised of 55 students, 35 teachers and 10 parents/guardians. Although the study due to lack of funds only covered schools in one province, Gaza, these schools are taken to be somewhat representations of other Mozambican schools, given that corporal punishment and the CRC are national issues.

Elaborate explanations of respondents' views and opinions on the possible impact of using or not using corporal punishment as a form of punishment in education can best be acquired through interviews. Questions were conducted orally on respondents and responses were recorded in a written format for subsequent transcription and analysis.

Data collected from the questionnaires and interviews was tabulated to show frequencies before being subjected to evaluative and critical analysis. Tables 1 and 2 respectively contain the details of the people participated in the study and the data that was gathered during the study:

Table 1: Demographic profile of respondents

	Gender	
	Male	Female
Stakeholders		
Teachers	18	17
Parents/guardians	5	5
Students	27	28

Table 2: Responses to closed questionnaire items by education stakeholders on their views on using (or not using) corporal punishment in education

ITEM	RESPONSES		
	Agree	Disagree	Uncertain
1. Relaxing corporal punishment has dramatically compromised the quality of education in Mozambique.	81	15	4
2. Relaxing corporal punishment has significantly improved the quality of education in Mozambique.	15	80	5
3. Corporal punishment should be used, but under strict control by education/school authorities.	83	10	7
4. Corporal punishment encourages good behaviour.	81	15	4
5. Corporal punishment deters potential offenders, hence encourages good behaviour.	83	15	2
6. Corporal punishment dehumanizes school children.	15	81	4
7. Corporal punishment promotes violence in society	15	82	3
8. Corporal punishment promotes peace in society	78	25	0
9. Corporal punishment should only be used as a last resort when alternative strategies have failed	66	30	4
10. The use of corporal punishment should be banned in Mozambique's public education.	15	82	3

Discussion of results

The research results in Table 2 show a number of different perceptions of corporal punishment held by different education stakeholders in Mozambique. The majority (81%) of the stakeholders

believed that relaxing the use of corporal punishment was compromising the quality of education in Mozambique. Reasons given for this belief were varied, but most of them revolved around the idea that students tend to take their schoolwork less seriously when they know that corporal punishment has been relaxed. A student interview respondent noted, “If I know that the teacher will do nothing except perhaps sending me out of class, why should I bother myself doing homework? Sometimes I even enjoy being sent away especially if it is a Mathematics lesson”. Likewise, when asked whether relaxing corporal punishment over the years has improved the quality of education in Mozambique, the majority (80%) strongly disagreed. They pointed out that the quality of education in Mozambique has drastically deteriorated in recent years.

A small percentage (15%) of the sample did feel that corporal punishment was not central to being a good teacher and that it did not enhance the teacher- learner relationship or quality in education. Thus, although the majority reported that corporal punishment enables teachers to create an environment of learning, the minority (15%) felt that fear and learning do not mix. The latter further believed that corporal punishment promotes violence and cripples teachers’ capacity to perform in the classroom as the teacher becomes a “small feared god” in front of his students.

Two-thirds (66%) of respondents supported the view that corporal punishment be used as a last resort. To this effect one of the respondents emphasised the need to move away from corporal punishment and towards alternative strategies. Alternative strategies include dealing with the learner directly by negotiating with the student, sending him/her out of class and contacting parents/guardians. Some respondents were quick to point out that alternative strategies come with their own set of problems and so were undecided on the issue. They offered examples of “stubborn” students who refuse to leave the classroom when asked to so by the teacher, thereby causing significant disruption to the lesson. In other cases, students have refused to bring their parents/guardians to the school when asked to do so or to relay school messages to parents.

Interestingly, the majority of respondents (82%) called for the full reinstitution of corporal punishment in Mozambique's public education. This result came as a surprise to the researcher. When asked to elaborate on this position, the majority believed that corporal punishment is cultural belief embodied in the adage//proverb (Nigerian) 'it takes a village to raise a child' and the Mozambican view that the teacher is the 'second parent' to the child. Also, it was widely believed that the country's education has been continually deteriorating since the desisting to use corporal punishment emerged in 2002. The deterioration was exacerbated by the subsequent introduction of the new Mozambican curriculum in 2004, which has been blamed for its inclination to raise demographic literacy rate statistics by progressing students to the next academic level.

The results obtained in this research are contrary to those obtained by Save the Children-Mozambique (2009) which pronounced that majority (84%) of the Mozambicans are in favour of the abolition of corporal punishment. According to the Save the Children-Mozambique's (2009: 10) report:

If children themselves could choose, they would prefer to be disciplined in a non-violent and non-humiliating manner. Approximately 84% of the children found corporal punishment in the home and at school unacceptable. Their sentiment was approximately the same for humiliating punishment, which 87% found unacceptable.

The difference in findings may be the result of differences in respondent population. While the present involves multiple education stakeholders (students, teachers and parents/guardians), the study by Save the Children-Mozambique was focused solely on students.

While majority of the respondents were in favour of the use of corporal punishment in education, they were quick to point out that the punishment should be properly administered and subject to strict control by education authorities. The majority of respondents (83%) believed that corporal punishment should be used in schools, but

with strict control by school authorities. One of the respondents, a female guardian, remarked:

Corporal punishment should be used in schools as it encourages good behaviour and discipline. It also encourages our children to work hard and do all their school work as they know that failure to do so will result in punishment. However, this punishment should be carefully administered to avoid physical harms or injuries on our children.

On whether corporal punishment dehumanizes school children, a minority (15%) strongly agreed. Their views support Hyman (1990), who argues that the use of corporal punishment in schools can be a traumatic experience for children. Similar sentiments were shared by UNICEF and Save the Children who contended that corporal punishment dehumanizes children and affects their concentration, motivation and anxiety, and leads to poor learning (UNICEF Asia Report, 2001, Save the Children 2010). The majority (81%), however, strongly disagreed and felt that corporal punishment in schools is not dehumanizing as long as it is properly administered. These views are in line with Vally (1998) who argues that corporal punishment has long been used as a successful means of controlling children and as means of societal control by governments. One of the respondents, whom the researcher suspects was a teacher cum pastor, echoed similar sentiments. He quoted the Bible saying that:

When Jesus Christ found people abusing his Father's (God) house (temple) he took a whip and drove them out. This was done as a way of teaching people to do right things at the right time and place. It is therefore morally permissible to teach our children using a whip if they go astray. More so, relaxing corporal punishment discourages teachers from performing their duties with excellence as this takes away their motivation and authority over students.

The above comment is in line with Maslow's theory of motivation. According to Maslow's (1943) theory of motivation, or hierarchical needs theory, human beings are motivated by unsatisfied needs, and certain lower needs must be satisfied before higher needs

can be addressed. Maslow also argues that there are general types of needs (physiological/spiritual, survival, safety, love, and esteem, self-actualization) that must be satisfied before a person seeks the achievement of higher order needs. For him, esteem needs, the second highest before self-actualization needs, emphasize the urge of a person to attain a degree of importance such as accomplishment, respect, reputation and recognition. A teacher who is denied the right to exercise authority over his/her students is de-motivated as s/he is denied some degree of legitimate importance, respect and recognition.

On whether corporal punishment encourages violence, a minority (15%) agreed. The majority (82%) of the stakeholders surveyed believe that corporal punishment does not encourage aggression in learners. This is contrary to views in education literature, which hold that corporal punishment encourages rebellion as it leaves the learners with feelings of anger and resentment making them likely to act in similar ways in other situations (Bandura & Walters 1963, Harvard Mental Health Letter 2002). Straus & Yodanis (1996) argue that adolescents who are subjected to frequent corporal punishment are at a greater risk of assaulting spouses later in life. Likewise according to Tharps (2003), the use of violence does not set a good example and encourages violent behaviour in children. Based on the views of some respondents, these differences in perspectives may be the result of cultural or contextual specificities. Nonetheless, the fact that the majority of participants hold that corporal punishment does not encourage violence warrants further research before any definitive conclusions are drawn. It also highlights the need for the 21st century researchers to put aside “abstract theorization” or “armchair philosophy” unsupported by empirical evidence and methodological rigor in favour of theory that has been substantiated by empirical data. The latter will undoubtedly require rigorous fieldwork in different cultures/societies attempts at theorization, lest we fall into the awkward and unproductive trap of generalization.

Conclusions and recommendations

This study sought an in-depth understanding of education stakeholders' (students, guardians/parents and teachers) perceptions on the use or reluctance to use corporal punishment in Mozambique's public education system. Corporal punishment as a tool of education has come to be seen as highly problematic, especially given the research results obtained by groups like Save the Children. The Mozambican government is still unclear as to whether it should enact national laws against corporal punishment in education.

In Mozambique, most research on corporal punishment, especially that conducted by pressure groups such as United National General Assembly (1989) and Save the Children (2010), has yielded different results compared to those obtained in the current research. The reason is very simple. Most of this research has tackled the question of corporal punishment exclusively from a student/child's perspective. Insignificant attention has been paid to the views of other education stakeholders (teachers and parents). This research has likewise failed to investigate the impact of using (or not using) corporal punishment on the quality of the product (student) produced and education in general.

This study contends that research focusing on only one stakeholder (students) is narrow and unreliable and cannot be expected to provide a satisfying answer to the question of corporal punishment. Such research if unquestioned or rather uncorrected is tantamount to misinforming national education policies, especially in the developing world where national governments struggle financially to carry out large research projects on their own. This study contends that for us to come up with a definitive answer to the question of corporal punishment, research must be conducted with all education stakeholders (students, teachers and parents/guardians) before findings are handed over to education policy makers and new laws are enacted.

The results of this study suggest that in Mozambique, corporal punishment as a tool of education is desirable as long as it is strictly

controlled by education/school authorities and as long as the punishment is administered to inflict “reasonable” pain that corrects bad behaviour and encourages hard work, honesty, discipline and quality academic work. This sentiment was echoed by the majority (81%) of respondents concerned about the deteriorating quality of Mozambican education, particularly since the first call to implement laws against corporal punishment in 2002. In the context of Mozambique, it appears that corporal punishment is problematic only in cases where the teacher uses his/her power to administer punishment as a way of improving the performance of an intellectually-challenged child or where the teacher punishes a child to the point of injuring him/her. This is an abuse of corporal punishment and is unacceptable both morally and legally. To avoid abuses of corporal punishment by some educators, it is important to offer staff empowerment workshops where educators can be equipped with the skills necessary to employ co-operative and supportive disciplinary approaches before resorting to corporal punishment. A close collaboration between education stakeholders (students, guardian/parents and teachers) can help to ensure commitment, hard work and the development of self-discipline in children.

The arguments and recommendations made in this study have been well buttressed by data obtained through research. A majority (82%) of the respondents supported the use of corporal punishment in education. At the same time, a slightly larger percentage (83%) pointed out that corporal punishment must strictly controlled by education officials to avoid abuses. It appears that in Mozambique, although most teachers do not administer corporal punishment for fear of persecution by the government, the use of corporal punishment is still viewed as a viable option. Most of the participants also felt that corporal punishment could be useful for a country still in transition [a Third World country] like Mozambique, particularly where alternative methods of discipline have failed or where educators are required by necessity to use it.

The on-going discussion of corporal punishment is fuelled by divergent perspectives and a lack of consensus on whether the

punishment should stand or be castigated into oblivion. These divergent perceptions have, to a larger extent, been predicated on the fact that the relationship between corporal punishment and quality of education obscures more than it illuminates. Likewise, disagreements on whether corporal punishment assists teachers in doing their job whilst supporting child learning at the same time, have also lead to varying opinions. The fact that not all participants in the present study felt that corporal punishment should remain illustrates the complexity of trying to implement corporal punishment as a universal policy. Corporal punishment continues therefore to be a contested concept and one deserving further research if we are to identify the best possible course of action.

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Exploring the architecture of appropriation of emerging technologies at South African Universities: A critical review

Patient Rambe

Abstract

The emerging discourses on the meaning and multiple, subtle ways emerging technologies (ET) have been appropriated at South African universities are highly contentious and ironically present a maelstrom of technological and pedagogical possibilities. These porous discourses are often implicated in the spectrum between traditional mainstream technologies and well-trodden constructs, and panoply of Web 2.0 enhanced platforms, tools, gadgets and applications, including multiple intervening variables clustered between them. The under-explored semantic constitution of ET is often loosely applied with reference to the surging appropriation of the yet-to-be understood and unproven technologies. This chapter, therefore, theoretically reviews and unravels this valorised, but disorientating discourse by troubling the construct “ET” and challenging the reductionism that often characterises the deployment of the term. The Critical Theory of Technology (CTT) is harnessed to critically problematize the sustained currency of these technologies and the rationale for their fragmented but progressive appropriation. Consequently, the review renders a nuanced account of the architecture of appropriation of these technologies at South African universities. The potency of this research lies in its (re)construction of the educational meaning of ET from a dense, constellation of technologies and the significance of such reconstruction for improved pedagogy.

Introduction

The debate on what emerging technologies (ET) are and how these are constituted remains a highly volatile and potentially explosive terrain (Dede, 1996; Godwin-Jones, 2003; ACT Department of Education and Training, 2005; Ketelhut & Niemi, 2007; Becta, 2008; Siemens & Tittenberger, 2009; Veletsianos, 2010; Bozalek, 2011). Consequently, a manifold of interpretations and constructions of ET has flourished: namely, as new collaborative technologies and media that offer distributed learning (Dede, 1996; Ketelhut & Niemi, 2007), Web 2.0 technologies that broaden individual control over information and sharing (Siemens & Tittenberger, 2009; Oblinger, 2008), second generation of the Web (Godwin-Jones, 2003) and perceivably the most academically impactful technologies in the projected future (Johnson et al. 2011; NMC Horizon Report, 2012). More complex constructions of ET have acknowledged and bridged the divide between traditional teaching technologies and Web 2.0 technologies (ACT Department of Education and Training, 2005; Ng'ambi, Gachago, Ivala, Bozalek, & Watters, 2012). Given these confounding interpretations of ET and the concomitant integration of these technologies into university life without problematizing them, serious questions should be raised about: (1) The authentic meaning of these technologies, (2) Rationale for their “hype” or uncritical embrace by the academic community and (3) Their disproportionate, often fragmented appropriation in academia notwithstanding the hype.

This chapter, therefore, constitutes a theoretical review that contributes to this debate by grappling with the discourses on ET, rationale for their hyper cycles including their often incoherent, non-systematic integration into mainstream South African higher educational institutions (SA HEIs). A Critical Theory of Technology (CTT) lens is marshalled to interpret and explicate the fragmented application of these ubiquitous technologies. Brief case studies on South African educators' appropriation of these technologies serve as a “melting pot” for a stunning, nuanced grasp of the character and texture of these productive (and potentially disruptive), least

comprehended technologies. The thesis of this chapter, therefore, is that a sound, intelligible (re)construction of ET ideally presents impeccable opportunities for their productive appropriation and renders a vantage point for deep pragmatic engagement with these technologies.

Consequently, the following questions are addressed in this chapter: 1. What is the current architecture (structure and trend) of appropriation of emerging technologies at South African higher educational institutions (SA HEIs)? 2. How have the university educators' constructions of ET manifested and played out in their implementation of ET at these institutions?

Emerging technologies (ET)-towards a definition

The fuzzy discourse on the meaning of or identity of ET is intellectual disorientating and mind numbing. A cursory look at emerging perspectives on ET provides some anecdotal evidence on their loose labelling as “new technologies.” However, any subscription to this ambiguous name is bound to be tenuous, deeply flawed and unquestionably problematic as it conjures a need to trouble the constitution of “newness” against an assortment of variables and contexts-constituency, spatial and temporal considerations. To whom, in what contexts, and when can a technology be conceived as new, are the inevitable questions that beg for genuine answers.

New technologies?

ET have been problematically constructed as “new” technologies or new media technologies (Singh, Pahwa & Sharma, 2012; Roe, 2003). Singh, Pahwa & Sharma's (2012, p. 3) definition of new media ranges from: “screen-based, digital (computer) technology involving the integration of images, text and sound, to the technology used for the distribution and consumption of the new digitised media content [...]”. Their definition captures technologies, devices and artefacts like computers, the Internet, digital cable and satellite TV, digital

media, internet downloads, video and music on mobile devices and user-generated content via websites and video/computer games. Singh, Pahwa & Sharma (2012) further argue that what differentiates new media from old media are five main concepts-digitality, interactivity, hypertextuality, dispersal and virtuality. Embedded in these arguments are decentralised forms of control over social practices and individual agency and choice in the use, networked distribution and customisation of new technologies.

Yet what “newness” constitutes is highly volatile and fluid. Worse still, the aforementioned traits (given as concepts) of new media, have existed in disproportionate amounts for approximately over one and half decades, hence further complicating the constitutive nature of “newness.” Internet relay chats, multiple user dungeons (MUDs) or groups, list serves, video conferencing and fragmented expression of virtual communities constituted the defining technologies of the late-eighties and mid-nineties. Veletsianos (2010) observes that even though it may be true that most ET are new technologies, the mere fact that they are new does not necessarily warrant their categorisation as emerging. In fact, newness inadvertently sets in motion a sense of technological determinism where technology determines not only what can be categorised as new practices but different forms of human computer interaction at any given time.

To further complicate the characterisation of ET as new media, Roe (2003) submits that historically, new media have always “borrowed”, “repurposed”, “reused”, “reappropriated”, and essentially “re-mediated” older media forms. Roe (2003) distinguishes instrumentalist versions of newness from radical views. The former is tied to a linear progressions of emerging/evolving technologies-a technologically determinist world whose forms and events are primarily designed by software and other technology corporations. On the contrary, radical projections of newness emphasise the value and meaning of these technologies, and hence the significance of an ethics and politics of the “new” in this context (Roe, 2003). Adopting the radical construction of newness, therefore, ties and attributes ET to its context of use, problematizes the perceived value embodied in human-technology interaction and the different forms of agency

enabled or inhibited by the appropriation of distinct or combinations of technologies.

The conflation of the perceivably old and new technologies and the deep implication of self-proclaimed new technologies in traditional technologies are self-evident. One perfect manifestation of this complexity is the seamless integration of conversational technologies (blogs, discussion forums, chat rooms) at SA HEIs into mainstream, institutionally sanctioned learning management system (LMS), further obfuscating the character and nature of newness in ET. Vula, the University of Cape Town's version of Sakai open source software, is a typical blended environment where both educators and students appropriate these discursive technologies via traditional LMS to engage in conversations about academic content and the identity of their learning community.

Collaborative technologies that sustain distributed learning

Other variant conceptions of ET emphasise synchronous, group, presentation-centred forms of distributed learning aimed at what learners need to be prepared for in the future and on new capabilities in the pedagogical repertoire of teachers (Dede, 1996). For Dede (1996) ET encapsulate the emergence of distributed learning-through-doing. This is a pedagogical model where: 1) knowledge webs complement teachers, texts, libraries, and archives as sources of information; 2) interactions in virtual communities complement face-to-face relationships in classrooms; 3) and immersive experiences in shared synthetic environments extend learning-by-doing in real world settings. Though not specifically mentioned in his abstraction, Dede's (1996) definition ET alludes to web-based research databases, social software, 3D immersive learning environments and Second Life, which represent a constellation of technologies that support multiple types of learning-situated, collaborative, reflective and mobile learning.

The most impactful technologies in the near future

Some literature conceive ET as those technologies likely to have a large impact on teaching, learning, or creative expression in higher education within a duration of one to five years (Johnson et al., 2011). Johnson et al (2011) cites the 2011 NMC Horizon Report which highlights selected ET on the horizon that are projected to have considerable potential for teaching, learning, and creative inquiry in the academic mainstream with the next one to five years. According to the same 2011 Report, electronic books and mobile devices occupy the most impactful place and are closer to mainstream adoption for educational institutions on the near term horizon. Augmented reality and game-based learning are the technologies envisaged to gain widespread usage within two to three years, and are candidates for the second adoption horizon. Gesture-based computing and learning analytics are projected for wide scale adoption in four to five years (far-term horizon). The Becta Report (2008) presents some incredible, practical implementations of ET involving the convergence of mobile devices, pervasive wireless connectivity, internet applications and services, location- and context-aware systems, including serious games and virtual worlds. Although these intelligent gadgets, networks and systems present a myriad of pedagogical possibilities, they are yet to be fully understood and explored by educational technologists while their impact on the quality of educational delivery is yet to be fully established.

Eclectic constructions of ET

Veletsianos (2010, p. 3) proposes a more unified definition of ET as “tools, concepts, innovations and advancements used in diverse educational settings to serve varied education related purposes.” This eclectic construction of ET denotes that ET are all encompassing, they transcend technical applications to include theoretical constructs, social and pedagogical practices, novel ways of (re)constructing, transforming and deconstructing knowledge. His construction foregrounds and is deeply implicated in multiple domains-intellectual, broader structural, socio-historical and cultural

domains that foster catalytic, disruptive and even inhibitive milieus for their expression and application. Veletsianos (2010) elaborates that ET experience hype cycles, are potentially disruptive, not yet fully understood and researched. The Horizon Reports' (2004-2008) characterisation of ET also emphasise the projected importance, significance and potential impact of future technologies including their entrance into the mainstream, with some fluctuations in the terminologies used to describe this perceived effect (cited in Veletsianos, 2010). Veletsianos (2010) perceives this shift in semantics and the focus on teaching and learning to be problematic as ET have far wider application beyond academia. In summary, Veletsianos (2010) epitomises the traits of ET as follows: 1. They may or may not be new technologies, 2. Constitute organisms that exist in a state of "coming into being," 3. They experience hype cycles, 4. Satisfy the "not yet" criterion of a) not being fully understood and b) not being fully researched or researched in a mature way, 5. Are potentially disruptive but their potential is mostly unfulfilled. His definition entrenches the view that educational technologies irrespective of their tradition of application, constitute evolving or even revolutionary technologies with regard to the fundamental transformative changes they introduce and sustain in their contexts of application, as well as their interpellation of existing, well established practices. As such, ET's effects on higher education are multi-dimensional-enhancing, progressive, transformative, or even disruptive of existing practices. ET should encompass popular technologies whose future significance is still widely debated, and remains uncertain or contested.

My definition, which I hope, extends Veletsianos' (2010) is that: emerging technologies denote a complex amalgam/interplay of context-informed, culturally-sensitive socio-technical systems, networks, processes, tools, applications, social objects, ideas, practices and creative (academic, business or professional) ways of individual/organisational conduct that support, maintain, adapt, transform or (or disrupt) meaningful social relations/engagements, social negotiations of agency and control across multiple settings. These systems, processes and tools target and enhance the

reorganisation (repackaging) of information resources and content, foster the alteration and reconfiguration of human social behaviour, leverage, adapt (or even disrupt) socio-cultural and political relations, reproduce or reconfigure the social context of interaction, and transform (reconstruct) the objects (intentions) and outcomes of interactions (affinities, affiliations, social relations and learning) within organisations. In my definition of ET I emphasise that they are:

Amalgams

These technologies are blends of multiple historically-situated of artefacts, tools, processes and inventions. A majority of the contemporary technologies are blends and refinements of similar as well as (distinct) innovations and ideas morphed by different inventors. Skype, for example, is an amalgam of digitized voice (audio) and video communication transmitted via the Internet or networked devices (amalgam voice and images, the Internet, and satellite technology). The same can be said of technologies like video conferencing, learning management systems, Facebook-technologies which integrate multiple technical tools, applications and processes and have different historical development trajectories.

Context-informed (/driven) and culturally-sensitive

These blends do not emerge from a vacuum, but rather have particular social-cultural history that explains their gradual metamorphosis, implicit development and continual refinement trajectory. While the psyche behind the advancement of these blends or intricate interplay of tools and processes often captures the assembly line production model of Post-Fordism (for example, learning management systems' reflection of mass production, storage and transmission), yet others like e-mail communication, have a strong military security resonance (developed for the American defence to support secret communications in the forces in the post-Cold War era). On the contrary, other ET like virtual libraries and digital commons were a consequence of the rise in the Open Source Software Movements whose philosophy is developing open creative

commons and widening access to intellectual property. Yet ET like social software (Facebook, Twitter, MySpace) borrow heavily from the notions of virtual communities, user-generated content and decentralisation of authority popularised by Howard Rheingold (Rheingold, 1993), Tim O'Reilly (O'Reilly, 2005) Community of Practice theorists (Lave & Wenger, 1991; Wenger, 1998) and Community of Inquiry gurus (Garrison, Anderson & Archer, 2000, 2001) in the nineties and early twenties.

Focused on change in systems and processes

ET constitute creative inventions that are geared at changing processes of generating, manipulating, packaging, distributing, storing and retrieving information and knowledge. ET like productivity software foregrounds efficiency and effectiveness in the capturing, hosting (temporary storage), presenting and productive use of educational resources. While the use of ET is imbued with good intentions, the use of delivery platforms/systems, information management and documentation processes often proceed and is filtered through the lens of traditional instruction resulting in chasm between aspirations and accomplishment. In contrast, there is a great deal of technologies, which despite their transformative potential, have been hesitantly/reluctantly adopted or even resisted in academia like social media and video games for various reasons like their disruptive nature, their additive nature and playful nature (Rambe, 2009; Rambe, 2011)

Implicated in human social relations

Notwithstanding the variations in the intensity of use and impact on social relations, ET tend to be deeply implicated in social exchanges and engagements between participating and non-participating agents (for example in lurking). The deployment and productive application of ET are deeply implicated in the exercise of power, influence and authority between and among multiple actors-students, their peers, senior students, tutors, lecturers, university administration and (local and international) communities. Different teaching philosophies and methodologies invoke the application of

different ET in different contexts to influence and direct different educational and productivity processes (engagement, self-regulation, critical thinking, information sharing, collaborative problem solving and scaffolding). Embodied in these processes are different forms of influence and power configurations that shift, transform and even disrupt student-content, student-peer, student-tutor, student-lecturer, student-technology and student-context relations (see Anderson, 2004).

Involve social negotiations across settings

ET especially social media are implicated in the negotiations of agency (individual/ social) (Rambe, 2009) at multilateral levels. Agency-the capacity to engage in purposeful, productive actions with impactful outcomes, can be realised within one's personalised learning environment (for example, through reflective blogging, digital storytelling on a personal website) (Rambe & Mlambo, in press), in small group interactions (intra-cluster engagement on WhatsApp (Rambe & Bere, 2012), inter-cluster collaborations on MXit), computer or mobile device-mediated environments (mobile academic networking on Facebook-enabled phones), within an organisation (Google applications like Google groups, or via LinkedIn), between organisations (social learning via video conferencing) and across learning communities.

Having crafted my definition of ET, I also emphasise that the characterisation of technology as “emerging and “new” is deeply context-bound, hence non-contextualised generalisations about what ET are inadmissible. For example, for SA HEIs where the adoption of LMS is still new or has not been considered by many educators or learning technologists, educators generally conceive LMS as “new” technologies. On the contrary, those institutions with an established tradition of innovative use of technologies that have traditionally used LMS for almost a decade, no longer regard LMS as ET. Similarly, for students coming from historically disadvantaged academic backgrounds who access computers for the first time in their university enrolment, computers tend to be conceived as ET. So while the definition of ET cannot be generalised with impunity, I

argue that the aforementioned traits that I proposed, can be cautiously extended to different contexts, as long as the reader is mindful of the shifting context of their application.

Critical Theory of Technology (CTT)

A critical theory of technology provides a dialectic account of the effects of human-technology interaction that bridges the downsides and incentives of technologies, by incorporating contradictions, ambiguities, ambivalences including unintended consequences of adopting technology. As Kellner (2005, p. 5) suggests, CTT plays off the extremes of technological utopia and dystopian claims against each other to “generate a more inclusive position, indicating how technology can be used as instruments of domination and emancipation, as tools of both dominant societal powers and of individuals struggling for democratisation, education, and empowerment.” Given the fuzzy and muddled ways of conceiving ET and the uncertainty that clouds its implementation, CTT’s middle-of-the-road approach (a compromise between extremes) anchored in its acknowledgement and reception of multiple possibilities and grey areas in technology adoption qualifies it as the ideal lens for unravelling the architecture of ET appropriation at SA HEIs.

Feenberg (1991) argues that CTT problematizes a variety of possible technologies and paths of progress among which human beings must choose. He further argues that technology embodies the values of a particular industrial civilisation and especially of its elites, which rest their claims to hegemony on technical mastery. In tertiary education, the role of the researcher is to trouble and critique these elite values and their multiple implications on quality instructional delivery to bring new, transformative and even unintended ways of learning, agency and social control. The CTT hypothesises that the design and appropriation of technology involves political rationality in which “the values and interests of ruling classes and elites are installed in the very design of rational procedures and machines even before these are assigned a goal” (Feenberg, 1991, p. 12). Mindful of

the often wobbly and inconsistent ways in which ET have evolved and been implemented at SA HEIs, critical questions should be posed about the nexus between sedimentation of elite values in technological design and the murky waves of adoption and implementation which ET have evolved in at SA HEIs. Can the different architectures of appropriation of ET (stagnating, crawling, steadily progressive but sluggish, modestly conservative) at SA HEIs be interpreted as consequences of educators' ambivalent negotiation of or crude understanding of ET or as outcomes of the absolute disjuncture between their pedagogical values and those of technological elites embodied in ET? Such a loaded question cannot be addressed without recourse to the interplay between ideology, technology and their implications on pedagogy, relations for which no shortcut answers exist.

As Feenberg (1991) cogently observes, technological rationality lies at the intersection between ideology and technique where they collude to control human beings and resources in conformity with "technical codes." He elaborates that this phenomenon unfolds through the invisible sedimentation of elite values and interests in rules and procedures, devices and artefacts that routinize the pursuit of power and advantage by a dominant hegemony. For instance, the design and operation of technologies like social media rides on and imposes an operational logic of subtle participative and facilitative power (or seductive forms of control) revolving around subtle requirements for users to: post their current thoughts (for instance, on Facebook or blogs), post short character messages (for example, on Twitter), social objects (pictures, profile information like on Flickr or Picasa), join networks and groups (as on Facebook), provide or contribute academic resources (like on Academic.edu), rate / positively affirm their peers in terms of desirable attributes (for instance which users is "hot"-for instance, on MySpace). Therefore, the design and choices on the use of technology are never value free, but rather set in motion a conscious co-constitution and interaction of designer and user's intentions and values that give rise to new imaginings, novel conceptions and unintended uses of technology. As such, the CTT, propounds that technology users' agency and being

are shaped by the structural contexts that define the different choices that they make about the use of technology in particular circumstances, and new (unexplored and unpremeditated) uses are brought about through engaging with the multiple uses of technology across diverse contexts. The human technology relationship is therefore, dual, reciprocal, mutually reinforcing and can be both enhancing and restraining, or even unanticipated.

As Northcut (2007) submits, CTT suggests that in using modern technology, it is possible for humans to control the technologies and deploy tools in positive ways, toward desirable ends. This constitutes an open rebuttal of the totalising and controlling effects of technology on human agency. Rather than embrace technological determinism as an inescapable *cu de sac* in which humans' very being and agency are entrapped, CTT, postulates a redemptive approach through which both critical inquiry and celebration of technology afford novel, productive possibilities in the application of technology. Given the complexity of the SA academic milieu marked by an uneven, differentiated access to ET, disproportionate institutional investment and support for it, cultural, linguistic and socio-historical diversity of educators teaching with ET at SA HEIs, a compromise between frenzy technological utopia and relentless dystopia is necessary to grasp the context-sensitive nature of ET adoption, varying level levels of SA educators' acceptance and intensity of adoption of it.

As such, the theory submits that "rather than abandoning technology, consciously and collectively reforming our utilisation of technologies can change the ways that technologies are perceived and, more importantly, ultimately used"(Northcut, 2007, p. 257). Essentially, CTT straddles a difficult terrain between outright utopia of technological determinism (purveyed by the instrumentality of technology) and self-professed dystopia of substantivism by charting a middle-of-the-road approach that acknowledges the essential value of technology, its perceived risks, ambiguities and unintended consequences. Given that the legacy of apartheid's contribution to asymmetrical access to learning resources at SA universities, SA's technology innovation chasm in relation to the advanced world

coupled with the dedicated efforts of a few ICT innovators at these institutions, a reality check is critical to balance over-optimistic expectations about technologies against the attendant risks and ambivalences that often accompany technology adoption at these institutions. The optimism in these resource poor environments often relate to ET's unsubstantiated potential to widen access, improve quality instruction, heighten students' voice and activism, foster learning communities. The attendant risks include technology's disruptive nature, additive tendencies, potential to reconfigure academic authority while ambivalences involve the hidden costs of acquiring unproven and less familiar technologies.

Technology expressed in purely scientific, abstract terms embodies the sedimentation and crystallisation of the values, preferences and ideology of the dominant elites. As Marcuse (1964, p. xv-xvi) rightly observes, "Technology serves to institute new, more effective, and more pleasant forms of social control and social cohesion... Technology as such cannot be isolated from the use to which it is put; the technological society is a system of domination which operates already in the concept and construction of techniques." An inference from this is that any informative comprehension of technology should be deeply rooted in its context of application and the nuanced possibilities and complexities that accompanies its use.

Why the sustained potency or hype about ET?

Inflated expectations

The hype around ET is spurred among other considerations by inflated promises of technophilia (or technological determinism) in which technology is touted unproblematically as the sole, grand source of redemption of the emerging economies from their societal predicaments and economic quagmires. These dilemmas include sub-optimal academic throughput, the social cultural divide, sluggish social progress and cultural transformation. Kellner (2005, p. 2) reports on the digerati's (that is, intellectuals who hype new technologies for advocacy and celebration purposes and reject their

objective critique) commitment to spread the salvation through technology message. This utopia has also pervaded the domain of technology-enhanced scholarship where notions of academic authority and regulatory control have experienced volatility and been unquestionably disrupted. For instance, the digital generation's self-access to learning resources and websites is conceivably locating these technology savvy youth in a transactive zone where they enjoy profound social control and authority in the production and authentication of content. In reference to the digital media-saturated learning environments, Oblinger (2008) affirms that in [this technological] environment where an instructor's statements can be immediately verified or discounted – based on information on the Internet – and in a world of collective intelligence, academic 'control' and 'authority' can easily be contested and hence take on different meanings. Yet the possibility and availability of verification and authentication opportunities do not in themselves guarantee student capacity to engage them, as being net-savvy does not necessarily constitute being techno-savvy and digitally literate. Many of the digital generation reportedly struggle with information literacy. Put mildly, opportunities for verifying information does not constitute the intellectual capability to make informed judgments about the relevance of information or guarantee the cogitative ability to process the information coherently across multiple domains and contexts.

New, funky and trendsetting

The lavishly aesthetic and seductive tendencies embodied in the view that “new is desirable” including trendsetting behaviours often border the inadvertent glorification of ET. The global consumerism occasionally purveyed with impunity through ET rides on the controversial self-projection and trendsetting behaviour among educators (as consumers of technology) that sustains self-indulgence and exaltation values. In a world saturated by uncritical media consumption, the definition of “funky” technologies is often problematically restricted to the glitz and glamour of appropriating the latest, trendy gadgets and services on the market (smart phones, iPads, e-commerce, e-wallet for electronic transfers of cash).

Literature warns that this unsophisticated culture is reinforced by permissive forms of control and interactivity embodied in participatory media like social networking sites (Jarrett, 2008) which elide into (un)conscious creation and consumption of digital media.

The consumerist behaviour and trendsetting mind-sets of elites, celebrities and socialites are also deeply implicated in the sales and market penetration of the latest technological tools, applications and gadgets. For example, the American corporate executives' shift from BlackBerry mobile phones to Apple's i-Phones is setting in motion some shifts in consumer behaviour regarding these mobile phones - a reflection of how technology is deeply implicated in corporate hegemony and ideology. Similarly, the changes in White House executives and elites' (including President Barak Obama's preference to access his national security briefings from his i-Pad to Blackberry) technology tastes and preferences (Minyanville, 2012) has potential to shake American consumers' preferences for BlackBerry phones.

Marketing gimmick

Technological enthusiasts have also fanatically fantasised about the hopes, promises and affordances of modern technologies as a marketing gimmick to broaden oligopolies' market share. Kellner (2005) observes that the collusion of these technological evangelists with media houses and countless aspirants who write for the media and specialist journals has enabled these groups' extraction of joys and cultural capital from touting proliferating gadgets and practices of the new cyberculture. Similarly, the neo-liberal agenda of opening up developing economies' technology markets to western consumerist products constitutes another face of the hidden, superimposed ideology behind the relentless, uncritical celebration of ET in African and other developing economies. The sharp critiques of the Information and Communication Technologies for Development (ICT4D) discourses undergird and expose Western superpowers' concealed economic and political motives that serve to consolidate their hegemony in weaker states (Thompson, 2005). By the same token, a handful of multimillion dollar ICT projects that purportedly serves to uplift the lives of poor people in perceivably

lucrative markets of Africa and India (Einhorn, 2006; Andrade & Urquhart, 2012) are other subtle manifestations of the marketing crusade of hegemonic, global technological corporations of the West. As such, in stark contrast with CTT's democratic rationalization principle, ET can be conceived as subtle extensions of hegemony and social control by global conglomerates, and accoutrements of the victory of international capital over local indigenous social practices and norms.

Technopolitics

The hype around ET can also be attributed to the vivid instrumentalisation of technopolitics. Harding (2009) acknowledges the intricate nexus between technological progress and politics. He insists that the advancement and adoption of technology cannot be exclusively interpreted on technical grounds but rather evoke political factors and decisions that inform the demand for and funding of the necessary research and development in particular fields. Harding (2009) alludes to the western governments' renewed interest in funding alternative energy technologies in the wake of the recent oil prices to be a manifestation of technopolitics at work. A perfect example of technopolitics is the 2008 US Presidential campaign that catapulted President Barak Obama to power in which social media campaigns by a youthful generation played a formidable role.

Reasons for the sluggish uptake of ET

Given the wide audience given to ET, an ideal expectation would be a wide scale rollout and uptake of these technologies at SA HEIs in particular and African universities in general. On the contrary, the South Africa universities' appropriation of ET can be described as disproportionate, differentiated and at times incoherent. As such, the implementation of ET at HEIs ranges from stagnant, crawling and patchy, surging but disproportionate, to emerging but not vibrant. The reasons for these anomalies are inexorably complex, multifaceted and therefore, hard to locate with precision. The following section, therefore, attempts to shade some light on the possible explanations as a general guide, rather than absolute factual knowledge.

Table 1: Reasons for fragmented appropriation / adoption of ET: Broad overview

Reason	Description of view / assumption	Research studies
1. Hype cycles	▪ The assumption that ET is a fad, lack of faith and mistrust of unproven, immature technologies. ▪ Too high expectations with technology eventually lead to disappointment with it as it fails to sufficiently deliver on all its intended goals. ▪ Disappointment often affected most those contexts in which the high expectations were not translated into stable institutions and long term commitments. ▪ The opportunities created by mobile technologies and internet cafés present some hope for private sector business expansion through optimal communication. Second generation mobile phones are accessible to relatively poor communities and can be used intensively across the supply chain of business. ▪ Certain technologies like the Internet continue to be the technology for the elite and discriminate against the rural poor due to these constituencies' conditions of low literacy and limited English proficiency. The barriers to entry for small communication firms, the monopoly of the communication sector by giant government-owned or subsidised corporations, coupled with high costs of communication disrupt the competitive capacity of small firms- a CTT argument.	▪ Ströhlein, 2007 ▪ Bakker & Budde, 2012 ▪ Tanburn and Singh, 2001
2. Disruptive nature	▪ ET activates educator loss of control of the class, expands and extends the in-class discourse to a broadened academic community (virtual and physical) with perceived unintended consequences, subverts authority in ownership and publication of knowledge. ▪ ET like Social media disrupts established relations of power and influence. Relations based on “friendship” and affinity distort and disrupt hierarchical relations of academic authority and regulatory influence as	

	they blur the boundaries between professional (impartial, impersonal) and personal business. They also blur the boundaries between authentic learning and opportunistic play, hence, the claims about edutainment. ▪ The pedagogical strategy to introduce and sustain in “student controlled spaces” is not always clear and educators are ambivalent about its meaning, constitution and definition ▪ ET like Web 2.0 technologies transform instructional paradigm from a formal, structured curriculum based model to a more open, informal, borderless learning model (Feuer, 2011). ▪ ET like social media subverts private communication through the transparency it brings to the interaction, particularly the visibility and retrievability of activities, ideas, artefacts and interests of third parties (Dalsgaard, 2008).	
3. Limited familiarity and institutional support	▪ Creative and productive pedagogical uses of ET are still to be fully understood and explored. ▪ Institutions have not always embraced these technologies as their pedagogical value is yet to be proven	▪ Veletsianos, 2010
4. Reinventing the wheel	▪ Ambivalence and fear of unlearning and relearning explains the educators’ ease with familiarity and comfort zones. Besides, these technologies are not that different from the old technologies through which they evolved, so they are not revolutionising education as it were. ▪ Significant educational outcomes are based on excellence in pedagogical delivery -and there is no significant difference in educational outcomes delivered through online e-learning platforms and face to face delivery. ▪ Other researches argue to the contrary. They suggest that ET like social media are new: “Facebook is a nascent space; [for which] hard-and-fast rules for educator–student interaction do not exist [...]” (Stutzman, 2008, p. 7)	▪ Siemens & Tittenberger, 2009, • Joy & Garcia, 2000 ▪ Stutzman, 2008
▪ Institutional constraints –	▪ Some ET are bandwidth-intensive technologies so networks are congested and	▪ see Bosch, 2009

	internet connectivity slows down when users congregate on them simultaneously	
Past disappointments with “holy grails”	Challenges with the integration of (old and new) technologies into teaching can discourage educators from experimenting with new technologies. For example, if adopters of ET experience countless obstacles in integrating technology into their teaching, they may convert their negative experiences into scepticism about the value of educational technology (Moser, 2007), which they may relay to the late majority or laggards.	Moser 2007

The architecture of appropriation of ET: A South African perspective

A handful of studies on South African experience of web-enabled learning support the view that despite the potential of ET to diversify the learning tools and events students engage with, a majority of lecturers still use a limited range of “traditional” [technology-enhanced] learning events (Gachago, Ivala & Chigona, 2012; Ng’ambi, Gachago, Ivala, Bozalek, & Watters, 2012). Ng’ambi, Gachago, Ivala, Bozalek, & Watters (2012) argue that the practical application of the term ‘emerging’ technologies is often not well defined and often misunderstood. To further compound this issue, their study on how ET are being used at SA HEIs cast an ambivalent picture on the broad conception of the term. Their survey on 262 SA university educational technologists, senior academics and directors of Teaching and Learning Centres’ conception and use of ET reports that although the most regularly appropriated technologies were undoubtedly web 2.0 technologies (research databases (75%); social media (69%); e-books (67%); social networking (64%); web-based documents (63%); and Open Educational Resources (OER) (60%), the institutional learning management systems (LMS) or content management systems (CMS) were top on the list as the most innovative tool used by educators. Given this conceptual swing between traditional and perceivably ‘new’ media and the concomitant

lack of clarity on the constitution of ET among SA educators, the deployment of the term ET is ambivalent in light of its affirmative reference to technologies whose appropriation and adoption emerged and were entrenched in the mid-nineties (namely LMS). More importantly, while the use of the term ET invokes a picture of novel and new ways of pedagogical conduct, educational delivery at many SA institutions remain cast in the traditional lecture and transmission (via LMS) mode.

Table 2: Case studies on the use of ET at South African universities: A critical reflection

Main ET	Findings	Researchers
Facebook	Rambe's (2009) doctoral study unravels University of Cape Town (UCT) Information Systems students' use of Facebook as an academic consultation space for those underprepared for university education. Facebook was used essentially as a question-based individual and group consultation environment. Facebook illuminated academics' understandings of student misconceptions about content taught in lectures. However, Facebook's transformative capacity for pedagogy, was not conceivable as transmission modes of delivery were retained. Bosch's (2009) study interrogates UCT students' engagement with social media and lecturer engagement with students via Facebook. Her study reports on differentiated use of Facebook ranging from student socialisation, lurking, academic conversations and keeping abreast with one's networks. Educators used Facebook for academic communication and addressing common questions from some students who would not otherwise speak in class. Both students and academics expressed unwillingness to be "friends" on Facebook. No fundamental transformations in pedagogy were reported, despite the acknowledgement of Facebook's potential to build learning communities.	Rambe, 2009 Bosch, 2009
Mxit Instant messaging	Makoe (2010) investigates the use of the mobile instant messaging service, Mxit, to support social interaction among University of South Africa's (UNISA) distance	Makoe, 2010

	study.	
Wikis, discussion forums	Hodgkinson-Williams & Gray (2009) investigated UCT 2nd year undergraduates enrolled for an International Public Law course's World forum use of wikis (that were incorporated into the learning management system) to accumulate learning resources about the country they represented in a legal role play. The lecturer used an open source based LMS built on Sakai (called Vula at UCT) to make primary legal resources available to the students. Students used discussion forums in the LMS to negotiate treaty provisions with other fictitious African States, to bring legal action against the other and to make oral and written presentations in plenary sessions involving fictitious inter-State conferences. Students also formed their Facebook group that excluded the lecturer to discuss legal issues The transformative use of ET is manifested in the generative character of Wikis, the contribution to the forums and student creation of additional learning communities. The pedagogy, however, suggests a "replacement model" (Hughes, 2005) involving the supplanting of face-to-face lectures with on line learning environments, although the presentations and representations of fictitious countries is commendable extension of traditional pedagogy. Carr, Morrison, Cox & Deacon (2007) explored the use of wikis for collaborative writing among final-year undergraduate political science courses. Their findings suggest that collaborative writing using wikis empowered students through knowledge sharing and collective meaning making. However, diverse views emerged only when they attempted to negotiate knowledge in this unfamiliar and potentially risky terrain. The work exposed the contradictions between students' individual work ethics and wiki requirements for collaborative engagement and sharing-leading to some of them competing tasks at the last minute. These findings paint a promising picture of potentially radical and transformative adoption of ET.	Hodgkinson-Williams & Gray, 2009 Carr, Morrison, Cox & Deacon, 2007
Blogs	Rowe, Frantz & Bozalek (2012) employ a case study approach to examine the online tools that physiotherapy undergraduate students at one South African university were familiar with, and how they used them as part of their learning practices. Students reported their desire for greater use of email, cell phones, social networks and	Rowe, Frantz & Bozalek, 2012

	blogs for educational purposes. Although a majority of them (93%) used social networks, a limited number of them used them for learning. The study reported student extensive use of the internet as an informational repository, and had not deployed it for academic networking with their educators. This suggests the reinforcement of transmission pedagogies. Van Wyk, (n.d.) interrogated the appropriation of blogs as e-learning journals for reflective writing and peer feedback tools for empowering and supporting Postgraduate Certificate of Education (PGCE) students learning to teach Economics and Management Science. Educators used blogs to critically reflect on the learning processes and to share their teaching practices. The findings reinforce the capacity of blogs to support collaboration between diverse communities, the sharing of information on teaching practice and the fostering of critical communities of reflective practice for student teachers during their teaching practice.	Van Wyk, n.d.
E-portfolios	Le Roux (2012) documents how an e-portfolio can be used to foster higher order cognitive thinking abilities of reflection and creativity of Information Technology students at the University of South Africa (UNISA). The e-portfolio served as a platform or rather a tool for an integrated assessment of these abilities in the capstone module and assessment of the knowledge accumulated from the foundational stages. The study suggests students' productive use of the informal feedback that they acquired to improve their portfolios. Through the use of the technology, students gained the necessary experience to use existing technology for an in-depth understanding of real world problems while educators gained some insights into productive teaching strategies that could improve students' industry –directed skills. Such practices point at the potential of ET to transform pedagogical practice. Kok & Blignaut (n.d.) piloted the initial design of an e-portfolio in which the teacher-students in School of Continuing Teacher Education (SCTE) at the North-West University (NWU) provided some evidence of sustainable professional career development to various stakeholders. The study suggests that introducing an e-portfolio strategy provided flexibility and support simultaneously to isolated students in remote areas with competing demands on time as well as to assessors who grappled with voluminous	Le Roux, 2012 Kok & Blignaut, n.d.

	supporting basic course administration (course outlines and calendar), meeting basic communication (announcements) and resources (uploading lecture notes and readings onto a resource directory) requirements. In her study, the few innovators and early adopters were using Vula to promote interactive teaching through the use of conversational technologies like discussions forums, as well as assignment submission and quizzes. This appears like a transition from web-enabled pedagogy towards innovative, transformative application of ET.	
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Emerging reflections, realities and possibilities: A critical perspective

Since the findings above were drawn from multiple universities and covered different academic years, some due caution should be exercised in the interpretations and deductions that this author derives from them. That said, given that universities select ET like institutional LMS and educators choose Web 2.0 technologies on the basis on a set of systematic considerations (scalability, usability, accessibility, triability, dependability, cost of (re)learning them), the critical mass of adoption and use of these technologies should generally be considered to evolve over a number of successive years. In light of this argument, however, the fact that much of the research considered was generally current (covering the last five years-2007-2012) and that the majority of it covered 2011-2012, it can be argued that this sample, though limited in terms of size, generally approximates the architecture of the uptake of ET at SA HEIs. Although, Western Cape universities (especially UCT) seem to dominate the case studies considered, this is unsurprising since more vibrant uptake of and research on ET, seems to have occurred at these universities compared to other universities. This is notwithstanding the fact that, the researcher could not access other journals on the use of ET at other universities due to copyright and restricted online access.

Generally, the much celebrated hype about ET in South Africa seems to be inconsistent with the anomalies conceived in technology implementation and the disproportionate adoption of ET at SA HEIs. In light of the findings in Table 2 and the researcher's personal reflections on ET adoption in SA, the following emerging trends (or models) are discussed-the minimalist and conservative adoption/appropriation of ET, replacement model of ET adoption, devolved model of ET adoption and the trailblazing innovator model. I explain these models in the sections below.

Minimalist and conservative model of ET adoption

The perceivably conservative adoption of ET at SA HEIs seems to mirror educators' hesitant (or reluctant) progression to new technologies via their modification and repackaging of mature, traditional technologies. The seamless integration of collaborative technologies (like blogs, discussion forums and into UCT's Vula, blogs into CUT's E-Thutho, collaborative tools into UFS's Blackboard) into institutional LMS is a possible example of educators' hesitancy about the full scale adoption of Web 2.0 technologies. In other contexts, however, this integration has not happened, for example, the use of collaborative course tools at CPUT does not necessarily require access to the institution's Blackboard learning management system. Although, educators seem to have some modest pedagogical hope in ET, the leap of faith to join full scale cloud computing is perceivably lacking. That said, there are few exceptions, where ET were used to transform pedagogy. For example, although these studies (Hodgkinson-Williams & Gray, 2009; Carr, Morrison, Cox & Deacon, 2007) were rooted in conversational technologies integrated with traditional LMS (minimalist conservatism), they report on transformative elements of pedagogy-which suggest more innovative adoption of these technologies. As such, straight jacket approaches to minimalist conservatism (for instance, associating integration of discursive technologies into LMS with lower productive uses of ET) should be guarded against due to the variations in the way pedagogy is applied, even within the same

university. Each case, therefore, deserves its own merits and has its own potential risks.

Overall, however, the fact that the institutional LMS, by and large, remains the mainstay technology adopted at SA universities suggests that these institutions still rank LMS as the most ideal technologies for tackling their challenges of access to content for large student enrolments, large classes, low throughput and low engagement. Arguing from a CTT perspective, Kellner (2005) suggests that technology can either be an instrument of domination and destruction or creative and life-enhancing depending on the technology in question, its specific uses in particular contexts, and the values and goals that are being pursued in particular situations. As such, the ideological values and competing choices about the appropriateness of technology are context-driven as much as they are defined by the institutional executives' orientations towards teaching with technology. An examination of the ideologies and interests embodied in technology adoption architectures at individual universities and their departments salvages us from both the determinism of technological utopia and reductionism of technological dystopia.

The critical issues at stake in given educational contexts often explain LMS' continued dominance and mediation of educational delivery at SA HEIs. For SA universities, these issues are the addressing asymmetrical access to educational resources, promoting inclusive education by closing the articulation-gap between heterogeneous learners (culturally, linguistically, socio-culturally and historically), improving retention and academic throughput, heightening students' digital literacies and / ICT competencies as well as addressing historical (including present) academic prejudices and disadvantages. These issues often remain major talking points in institutional and individual educators' choices about technology, philosophies of teaching with technology, and improving the quality of university teaching in general. As Feenberg (1991, 12) rightly puts it, "In choosing our technology we become what we are, which in turn shapes our future choices. The act of choice is technologically embedded and cannot be understood as a free "use" in the sense

intended by instrumental theory.” As such, technological choices at SA HEIs nicely dovetail with their institutional identities, the (current and) envisaged shape and size of their academics and student bodies and the ideological aspirations of those in control of these institutions.

A replacement model of ET adoption

In some instances, the uptake of ET has followed a replacement model, where modest conversational, social constructivist traits, approaches and strategies have been embraced but within a fundamentally unchanged pedagogical style. For Hughes (2005), a replacement model underlies the performance/realisation of pedagogical goals with technology that could otherwise be met using a different mode (for example, paper-based mode) or by other means. E-learning systems like WiseUp and myUnisa (for Walter Sisulu University and UNISA respectively) have incorporated some elements of student-peer and educator-peer dialogue and conversations in broadly transmission pedagogical mode. As Nel (2010) mildly puts it, since many facilitators regard the management of an online component of blended courses as a great deal of work, they often only use the LMS to make the minimum required information available to their students. Consequently, the multiple possibilities that an LMS can offer to support the face-to-face mode of instruction are never exploited (Nel, 2010). In some extreme cases, some formerly paper-based modules have been progressively replaced or supplemented with online delivery, and a selected range of conversational tools have been adopted but without any radical transformation in the pedagogical delivery strategy or the form in which the content is delivered.

The replacement (or supplementation) of face-to-face elements with online mode adopted via myUnisa (Unisa’s version of online portal), Blackboard LMS at Durban University of Technology and at the University of the Free State are ideal examples. Given that senior management like directors of Teaching and Learning centres, senior executives of Information and Communication Technology Services (ICTS) and senior educational technologists play a critical role in

determining the competing choice of, and ultimately the actual technology to be adopted, it is undeniable that their ideological interests, political choices and unverbaised values significantly influence these allocative decisions. These may include, their desire to extent influence and control over subordinates, wielding more status and prestige through developing “innovative identities,” developing a collegiate community of researchers, disciplining (or silencing) and proving critics wrong. As CTT suggests “technological rationality has become political rationality” (Marcuse, 1964, p. xv-xvi.) as the values and interests of ruling classes and elites are installed in the very design of rational procedures and machines (Feenberg, 1991, p. 12). Senior academics and executives’ sedimentation of and routinizing of regulatory power and influence find expression in LMS through various means: control of plagiarism through software like turnitin (software for online submission of assignments), grade book for assessing the performance trajectory of batches (cohorts) of students, educator’s online presence (lurking and informal surveillance) on students’ blogs and Facebook discussion forums, detection of academic misconduct through the use of log in details and production of successful academic graduands in batches and siphoning of academically weak students.

Devolved model of ET adoption

With regard to the adoption ET like social media, SA university educators seem to be adopting a devolved and / laissez faire approach to supporting student engagement. Many educators have avoided befriending and engaging directly with students via Facebook or Twitter or blogs for fear of breaching social distance between themselves and learners and maintaining professional relationships (see Bosch, 2009). Perceived fear of loss of control and breakdown in professional relations have forced some senior educators to devolve the authority of managing Facebook group forums and discussion forums to tutors (for example, the Global Citizenship: Learning for Social justice discussion forums and Facebook group group) (see Rambe Report, 2011). In other cases, lecturers have only responded to student expectations of their support on social software based on

student need for instance, academic use of WhatsUp at CUT (Rambe & Bere, 2012), Facebook use in the IS department at UCT (Rambe, 2009)) or have not participated at all evolving research on student use of blogs in the HR department at CUT (Rambe & Chipunza, in press). The aforementioned educator fears and hesitations perfectly mirror Gratham's (2009) view that technologies are not value-neutral, and that they can never be removed from their particular social and local contexts-a consolidation of the CTT view. This view buttresses Feenberg's (1999) observation that the choices between multiple alternatives [of technology use] depends on the fit between devices and the interests and beliefs of the various social groups that influence the design [and implementation] process. Consequently, the drive towards devolved authority is an instantiation of academics' realisation that democratic technologies are hard to appropriate and implement without ceding some control to third parties and hence their imposition of permissive forms of control (e.g., use of tutors to regulate discussions).

Technology innovators' trailblazing lurch into the deep

The fragmented use of ET is often the initiative of innovative, techno-savvy educators, who demonstrate resilience and persistence even in the wake of differentiated institutional support to adopt ET. The institutional support for ET, is often differentiated, complex and fluid. It ranges from support for new trials and piloting with new ET, louder calls for educators to teach and research with ET under the flagship of executive and senior management (see Exco online), support for Technology show case days by departmental heads, directors of Centres for Teaching with Technology, provision of wireless hotspots or drive towards broadband, ambivalence and misgivings about the educational benefits of ET, to institutional bottlenecks and provision of cautionary signage on the use of bandwidth-intensive social activities (like social networking, downloading and playing of music videos, blocking of Skype). For example, the Centre for E-Learning and Educational Technology at the Central University of Technology (UCT) dedicated the 23rd and 24th of August 2012 as e-Learning Showcase days for their and the

University of the Free State (UFS) academics and educational technologists to showcase their creative use ET through seminars and demonstrations. The fact that these ET show case days were organised by heads of Teaching and Learning Centres with senior executives' support resonate with the fact that innovators' lurch into the technology deep can also be joint enterprises. For example, at UCT and UFS, the Distinguished Teachers Awards and Vice Chancellor's Prestigious Award for Innovative Teaching respectively are conferred to educators who demonstrate novel and innovative teaching often with the support of technology.

However, in cases where there is a fragile ET adoption architecture and institutional support structures are virtually non-existent, the ET appropriation and adoption often entails the solitary, painful journey of individual, innovative educators who experiment with, and give tangible evidence for improved student performance or engagement to back up their claims for broadened institutional support.

Implications for pedagogy

Mindful of the hesitant, progressive, including the tenuous adoption of ET at SA HEIs, such adoption models have the following implications for pedagogy:

- A more radical transformative approach in the use of ET that covers complete re-engineering of pedagogical strategy and intended outcomes is necessary. Rather than simply appreciating the pedagogical potential of ET, educators also need to take one step back to understand whether it (ET) is necessary in the delivery of intended pedagogical goals and then analyse the best combinations of technologies that could best meet these intentions, expectations and priorities. Mindful of the ambiguities and contradictions that often plague the appropriation of ET, some back up and remedial strategies should always be contemplated and designed to address the unintended consequences of the (problematic) use of ET long before they manifest in the pedagogical delivery and evaluation processes.

- More selective, targeted interventions by senior educators to support devolved academic authority of students are necessary to back up the support already provided by junior staff (teaching assistants, tutors) in student appropriation of ET like social media. Selective interventions could include provision of background or supplementary materials not normally provided in class, provision of guest rapporteurs on students' online contributions, fostering international online collaboration and engagements through small work teams. Such collaboration could take different formats, like student-controlled UN Models (simulations of UN Plenary sessions), simulations of international human rights courts, or parliaments to deliberate on issues of academic importance.

- Broadening the current use of ET to cover students' full appropriation of personalised learning environments and ownership of their voice. The re-engineering of Web 2.0 environments (for example, e-portfolios, Second Life, video games) and social media spaces like Facebook group forums to support dialogic engagement through provision of content for students to comment on, student-generated content, write up of reflective accounts of their engagement, affordances for the generation and peer evaluation of self-generated applications and artefacts would greatly transform their academic value.

- Providing educators with best models and best examples of productive use of ET is critical to productive use of ET. When educators are rendered practical evidence on the affordances, pedagogical gains and student performance derived from using ET, they are better positioned to appreciate the educational value of ET. Given the nascence of ET, high quality blue sky research would be necessary to ensure that this happens.

Conclusion

Although there is a growing profile of research on ET, it is surprising to note that much of this literature emphasises traditional technologies like LMS that have been in existence for decades. Alternatively, the mention of ET is made with reference to

conversational technologies that have been impeccably integrated into mature, institutionally sanctioned technologies. While it is not necessarily problematic to integrate “new” technologies into LMS, what is disputable is the tendency to use these technologies as information portals that merely replicate the transmission mode of teaching and learning. The application of ET should target the transformation of pedagogy through the heightening of student generation of authentic, well-thought content, fostering of critical, theory-informed discourses, enhancing of collaborative sharing of resources and development of authentic learning communities for deep and transformative learning.

Another stand of thought associates ET with the wave of Web 2.0 technologies that seem to be evolved, updated or repacked versions (or extensions) of existing technologies. These conceptualisations, this study has demonstrated, seemed to convey some connotations of ET as synonyms of least explored or least understood educational technologies, tools and applications. The characterisation of what ET are remains under explored and as such, a mirage in the absence of a distinct definition and a guiding conceptual framework.

In spite of its broadness and complexity, Veletsianos’ (2010) encompassing definition of ET was conceived as a poignant starting point in searching for an intelligible definition. This work, hopefully, built on and extended Veletsianos’ (2010) definition by putting forward four propositions that ET are *context-informed* and *culturally-bound* / sensitive, are creative processes *implicated in transformative change* of systems and processes of production, are often tied to and *motivated by social interactions* involving the exercise of power, influence and authority, and involve social *negotiations of agency* across *multilateral settings*. Specifically, the work documented the social embeddedness of ET including their complex historical development and progressive refinement trajectories, the drive towards the improvement of educational quality and effectiveness, the (re)configuration of power, voice and influence implicated in ET adoption including social agency that has an overwhelming presence in the appropriation of these technologies.

The enigmatic complexity of the hype around ET, despite the lack of a shared conceptual definition, was also unravelled. This examination provided the basis for articulating the rationale for the fragmented appropriation of ET in general and articulating the architecture of appropriation of ET at SA HEIs. This discussion was critical to providing some insights into the delivery of quality technology-enhanced learning at university given the paucity of macro studies that cast a bigger picture on the subject. Although theoretical in nature, this study rendered some practical reflections based on these multiple micro studies and their implications for pedagogy. Through somewhat controversial given their inclination towards traditional elite universities with a strong ICT adoption culture, these implications are contextually-bound and reflect the complex landscape of emerging, fragmented, differentiated and sometimes hesitant implementation of new technologies in resource constrained environments. More so, even in these institutions with a strong adoption culture, variations persist in the use of technologies across disciplines, faculties, among individual lecturers and students. This is because not all subjects and courses demand the same amount of and intensity of use of ET. More so, professional experience suggests that the resource base of departments varies depending on the extent of the academic presence and amount of authority wielded by respective department heads and faculty deans. Although not the focus of this study, the other considerations accounting for the increased potential use of ET include: size of departments, availability of technical support and the number of senior professoriate in respective departments who lobby and influence departmental allocations on ICT at faculty board levels.

That said, there are some exceptions to this view of traditional universities with a strong ICT adoption culture's lead in ET appropriation. For example, some historically disadvantaged universities like CPUT are making some inroads and strides in developing digital footprints through intensified use of ET, even with limited or no financial support from donors. As such, while generalisations about ET adoption at universities provide a panoramic view of the architecture of adoption of ET at SA HEIs, a

more authentic reality check should adopt case-by-case micro studies of technology use within departments as well as cross sectional reviews of ET adoption at faculty levels to allow for inter-departmental and interfaculty comparisons with and across universities.

Perhaps, critics may allude to the absence of an empirical study in this research, but the author is convinced that the evidence drawn from the case studies reviewed here constitutes practical manifestations of the appropriation of ET at work.

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Using Web 2.0 technologies to support blended collaborative learning of critical citizenship at a South African University

Patient Rambe

Abstract

Multiple studies have explored the potential of Web 2.0 technologies to support contextualised learning on the one hand, and the capacity of critical citizenship to foster meaningful learning on the other. However, insufficient attention has been deployed to grasping the nexus between the academic value of Web 2.0 technologies (like social media) and the advancement of critical citizenship at African universities. This chapter, therefore, addresses this disconnection by exploring the appropriateness of emerging conversational technologies (chat rooms, discussion forums, blogs and Facebook) in supporting the learning of critical citizenship in blended learning environments. Community of Inquiry and a case study approach are drawn upon as theoretical and methodological frameworks for unravelling the productive convergence of networked conversational technologies, student cognitive frames on critical citizenship, and construction of sound pedagogical strategies in situated blended learning contexts. Findings confirm the capacity of conversational technologies to sustain academic articulations of contested citizenship topics which students would not otherwise sufficiently tackle face-to-face, discursive exchanges of pedagogical content knowledge and the generation of knowledge in connectivist scholarly inquiry. These accoutrements of academic scholarship profoundly attest to the appropriateness of conversational technologies in critical citizenship discourses. However, the challenges of these Web-based engagements included student failure to deliberate on critical

citizenship issues thematically leading to fragmented discussions, a general lack of theoretical and analytical depth of postings due to limited student confidence with technology, and occasionally emotive critiques of peers' views that lend themselves to general misconceptions and misinterpretations of peers' arguments. The findings' implications for pedagogy are deliberated.

Introduction

The discourse of critical citizenship (CC) is highly contested and multiple interpretations of CC have consequently emerged (Advisory Group on Citizenship, 1998; Osler, 2000; Carducci & Rhodes, 2005; Smith, Ottewill, Jubb, Sperling & Wyman, 2007; James & Iverson, 2009). From a *media literacy* perspective, Carducci & Rhodes (2005, p. 5) argues that CC (or citizenship education) foregrounds “the development of empowered identities and seeks to cultivate individuals with the skills and dispositions to be active participants in a variety of social and political processes.” Such nurturing of identities requires a shift in student conceptions of public participation from wholesale media consumerism towards critical questioning and practical criticism during the formulation of public opinion and decision making. Similarly, the Advisory Group on Citizenship (also branded the Crick Report) (1998) conceives CC to embody three strands: *social and moral responsibility*, *community involvement* and *political literacy*. This intellectually demanding political endeavour expected of students should undergird their empowerment to participate in society effectively as active, informed, critical and responsible citizens (Advisory Group on Citizenship, 1998). Yet the cogitative demands on students are just as peremptory as their being politically well informed about broader societal issues including their capacity to handle the emotional, relational demands of critical citizenship. From a pragmatic perspective, therefore, Osler (2000) contends that programmes on citizenship education must enable young people to understand the barriers to citizenship and equip them with the skills to challenge and overcome such barriers.

The explosive growth of Internet usage in South Africa (particularly among college students who use institutionally-sanctioned networks) presents enormous opportunities for their participation in discourses of critical citizenship. Essentially, the South African Internet user base impressively surged from 6.8-million in 2010 to 8.5-million at the end of 2011 - no less than 25% growth (South Africa Info, 2012).

Mindful of the explosive growth in internet usage even among the disadvantaged communities, a strong case for virtual debates on citizenship can be advanced. Kreutzer's (2009) study on South African disadvantaged learners' access to the mobile internet reports a considerably high learner access to the internet via mobile devices. Navigation of social networking sites, appropriation of mobile instant messaging applications and web browsing constituted the most popular social networking practices among the learners. The quasi formal character of citizenship education, the convergence of university students on the Internet, coupled with the deliberative and conversational nature of Web-based social technologies ideally qualify social technologies as best fits for articulating citizenship discourses.

Rambe's (2012) research on social media usage among university students reports on the increasing convergence of internet browsing, mobile network resources and social networking. Cognisant of the surging uptake of mobile networking coupled with South African youth's assertive presence on conversational technologies like social media, these emerging technologies are envisaged to play a fundamental role in the advancement of critical citizenship debates. Despite critical citizenship's commitment to informed engagement and critical reflection on political processes of public decision making including the projected potential of web-based social technologies in its advancement, the appropriation and perceived significance of internet-based conversational technologies (e.g. blogs, discussion forums, chat rooms) for the mediation of critical citizenship discourses remains disappointingly low. This chapter, therefore, seeks to promote dialogue between critical citizenship and internet-based conversational technologies by exploring the potential

/appropriateness of blogs, discussion forums and chat rooms for fostering student-peer engagement on critical citizenship.

The rest of this chapter will be structured as follows: an overview of blended learning is rendered, the different constructions of critical citizenship are articulated, the arguments for appropriating web-based conversational technologies in critical citizenship debates are presented, a brief theoretical framework and research methodology are provided, the findings and their implications for pedagogy are discussed and a conclusion is given.

Blended learning (BL): An Over view

Since this chapter underscores the appropriateness of web-based conversational technologies for blended collaborative learning of critical citizenship, grasping the different constructions of blended learning (BL) is critical to this study. BL is heavily contested in literature (Driscoll, 2002; Kerres & De Witt, 2003; Osguthorpe & Graham, 2003; Graham, 2004; Singh, 2003). Graham (2004) defines it as the combination of instruction from two historically separate models of teaching and learning: traditional face-to-face learning systems and distributed learning systems, which emphasise the central role of computer-based technology. Dziuban, Hartman & Moskal (2004) view BL as a pedagogical approach that combines the classroom's effectiveness and socialisation opportunities with technologically-enhanced active learning possibilities of the online environment rather than a ratio of delivery modes. Pragmatically conceived, therefore, BL is less about the proportions of content produced and transmitted online /via a particular mode and more about the re-engineering of pedagogical strategy to deliver expected teaching and learning outcomes. Singh (2003) conceptualises it as a much richer set of learning strategies that can be integrated in multiple ways: offline with online; self-paced with live, collaborative; structured with unstructured and custom content with off-the-shelf. The focus is on modes of interactions and their varied structure and not necessarily the proportion of content served via a given platform or learning environment.

Conversely, other constructions of BL are rooted in the delivery media rather than the learning environment. Valiathan (2002) characterises BL as a solution that combines some different delivery methods like collaboration software, web-based courses and knowledge management practices. More informative definitions embrace the complexity of BL by emphasising the bridging of different learning approaches, diverse delivery methods, different media and/ learning environments to ensure efficient and effective realisation of learning goals.

This work identifies with Graham (2006) who emphasises the motivations and practicalities of blending in his classification of BL systems:

1. *Enabling blends*, which focus on addressing issues of access and convenience,

2. *Enhancing blends*, which incorporate incremental changes to existing pedagogy, such as offering resources and supplementary materials online while in a traditional face-to-face learning environment and

3. *Transforming blends*, which facilitate radical transformation of pedagogy by taking full advantage of the capacity offered by technology (Graham, 2006).

Notwithstanding its diverse interpretations, the central point in BL is creating an appropriate and effective mix/combination of learning strategies, media and environments to support improved pedagogical delivery. Another critical consideration in BL environments is a critical assessment of learners, learning environments and learning goals to ensure effective complementation of learning strategies or environments with learning needs and expectations.

Constructions of critical citizenship

Since this chapter emphasises critical citizenship (CC) in web-based conversational environments, the discourses on this subject

need sufficient investigation to put the study in its proper perspective. The discourses on CC can be categorised into: *cognitive, political and activist* domains. These are unpacked as: cognitive advancement and awareness (Mattes & Mughogho, 2010), political literacy and democratic citizenship (Crick Report 1998; Carducci & Rhodes, 2005) and activism to overcome the constraints of discrimination, social injustice and inequality (DeJaeghere, 2009; Osler, 2000). From a cognitive perspective, CC entails capacitating and leveraging learners' cognitive faculties so that they sufficiently embrace and master practical criticism of public decision making and development of solid judgements about authentic and demonstrable political involvement. To unpack the nexus between formal education, cognitive awareness and CC, Mattes & Mughogho (2010) examine African intellectuals' potential to offer critical evaluations of political and economic performance of public institutions. Their analyses target these Africans' evaluations of the *supply of democracy* provided by multiparty regimes involving these Africans' level of satisfaction with the operations of democracy. They also interrogate African assessments of the legitimacy of political systems as well as their level of trust and confidence in public institutions like the presidium, members of parliament, councillors, judges and tax officials. Grasping these complex political processes necessitates sophisticated political acumen, shrewd conceptual understanding and interpretation of fragmented information and complex, imperfect knowledge from multiple sources (print and electronic media, government documents, and political web sites).

Consistent with the potential of critical awareness / literacy to shape collective political action, Moore, Gegieckas, Marval, McCauley, & Peloquin (2011) document how the youth harnessed social media as a political instrument for public democratic expression and participation in the run up to the 2008 United States elections that ascended President Barak Obama into power. They also articulate how these sites were strategically deployed as youth spaces for political mobilisation and activism in the Arab Spring uprisings that toppled multiple regimes in North Africa and the Gulf region. Mindful of the youth's immersion in digital media, the

profound potential of social media to advance CC discourses cannot be underestimated.

Another strand of critical literacy is political education, which transcends mere indoctrination by presenting new possibilities for critical and informed understanding of political systems and diverse disciplines. The Crick Report (1998) emphasises the teaching of open informed discussions vital for a healthy democracy and extending these discourses to all fields of academic endeavour. The Report affirms that these deep, informed engagements should be grounded in balance[d] [interpretation and analysis of issues], fairness and objectivity to guard against biased and unbalanced teaching or indoctrination. Carducci & Rhodes (2005, p. 3) emphasise the advancement of “*media literacy*—the ability to critically analyse and decode messages embedded in various media productions” as a gateway to learners’ full participation in the values and practices of CC. To attain CC that empowers each individual’s identity, advance democracy and the pursuit of social justice, Carducci & Rhodes (2005) challenge college students to construct alternative interpretations of media stories and messages to contest the negative racial stereotypes often perpetuated in prime-time television reporting. This would counteract uncritical acceptance of and internalisation of one-dimensional, monocultural portrayals of contemporary society often embedded within pop culture media productions (Carducci & Rhodes, 2005).

The third perspective on CC foregrounds activism aimed at *overcoming the constraints and shortcoming of social injustice and discrimination*. DeJaeghere’s (2009) work acknowledges that CC discourses in the American society and school contexts have deliberated on immigrants and non-whites’ political, social and civic engagement. Specific emphasis has been devoted to Latino/a, African American, and Native American youth’s sub-optimal academic participation, under-achievement, untapped educational opportunities and minimal civic engagement. Not only do the limited academic participation of these groups precipitate their high drop-out rate from schools but ultimately reflects on their general political apathy in public discourse and decision making. Similarly, Osler (2000) paints portraits of

fissures in public participation involving British youth's disproportionate involvement in public political processes like elections. She laments that local media and the Crick Report seemed to convey some moral panic with regard to the health of the British democracy, the public's perceived lack of confidence in political processes and the 'disrespect' of young people for parliament and other political institutions. Consequently, political activism and balanced political participation are envisaged to contribute to the bridging of the inter-generational fissures in public participation, overcoming political exclusion and marginalisation precipitated by uninformed /misinformed civic behaviour or general political apathy.

Arguments for using conversational technologies in collaborative learning of CC

After articulating the different constructions on CC and BL, it is cogent to render intellectual arguments on why conversational technologies are conceived as best fits with CC advancement. These arguments are articulated in subsequent sections.

Deliberative democracy and the dissolution of the ivory tower

Traditional modes of knowledge production reinforce the articulation of knowledge by the professoriate and seasoned experts and the validation of disciplinary knowledge through peer review and informed scholarly critique. On the contrary, Web-based conversational technologies employ the concept of "mass intellectuality" (Virno, 1996), a democratic process of building, articulating, and exchanging knowledge through collaborative engagement between experts and novices via non-hierarchical learning networks. This subversion of the ivory tower system of knowledge construction and silo publication broadens the floodgates of citizenship education and liberates publication of CC content from the control of the academic oligarchy. As Moll & Krug (2008) articulate, contemporary practices such as online game playing, video-blogging, and instant messaging by heterogeneous web users are

challenging established power structures of knowledge production, interrupting notions of the authority of the written word and redefining how authors distribute information in societies. Consequently, social technologies' reconstitution and disruption of critical inquiry breaks the frontiers of knowledge erected by traditional modes of knowledge dissemination and engenders deliberative democracy for novices often dependent on academic elites for scholarly knowledge.

Unlike learning management systems (LMS) that are driven by a pre-determined learning model based of the “four Gs” (generate, gather, group and then give information) (Miller, 2000, Herrington, Reeves & Oliver, 2005) which reinforces transmission modes of delivery, networked learning via social technologies is informed by a different model. Web 2.0 collaborative technologies (Facebook, wikis, photo sharing applications, moblogs) are discursive in nature and provide opportunities for user-generated content and publishing of personal knowledge. This unfolds through social exchange and validation of CC opinions in community networks (peer-based, interest-based and knowledge-based) with limited influence from academics.

Student-regulated “affinity spaces”

Social technologies provide opportunities for the crystallisation and metamorphosis of interest-based and knowledge-bound learning communities on CC. Essentially, they are incarnations of student-regulated “affinity spaces” (Gee, 2004). Through Facebook networking, collaborative tagging and reflective blogs, collaborative learning communities that are dependent on user-generated content and sharing of diverse forms of knowledge (tacit, experiential, community-based and academic) are developed. Bosch's (2009) study on student use of Facebook at the University of Cape Town reports that students conceived Facebook as a cool habitat to socialise and extend networks while discussion forums were conceived as constitutive of the mainstream LMS for accessing lecture content. Given that “sharing” and “social relationships” constitute the heartbeat of Web 2.0 interactions, social technologies naturally foster

affordances for informal learning clusters glued around production of personal knowledge, articulation of mutual interests and collaboration (Rambe, 2009) making them ideal platforms for CC discourses.

Developing knowledge workers

Mindful of the increasing trend towards the convergence of social networking and internet searching, higher educational institutions should infer that developing knowledge workers who use informal peer-based networks to complement officially sanctioned knowledge is becoming the norm. Online social networking is becoming an entrenched social practice that can substantially co-exists with conventional methods of inquiring about CC. De Laat & Conole's (2008) survey on American college students' use of technologies to enhance learning activities reports that they often valued discovering and selecting technologies on their own. The research reports that when students encountered problems with an officially sanctioned technology, they quickly bypass it in favour of one that better fitted their needs. Discussing the process of cultural artefact production via peer-based networks, Ito et al (2010) employ the metaphors "messing around" with new media that mediates between genres of "geeking out" and "hanging out." Such social practices are central to the development of critically reflective knowledge workers in participatory cultures that are anchored in new knowledge generation and development of new applications on CC.

User generated content

At the heart of web-based conversational technologies is user-generated content. Web 2.0 technologies like social media privilege transactive interaction, production and publication of knowledge by both experts and amateurs through mass intellectuality. As Redecker et al (2009) suggest, social media integrates learning into a wider community, reaching out to virtually meet people from other age-groups and socio-cultural backgrounds. Such conversational technologies, therefore, are central to the building of knowledge-based communities which are "prosumer" (that is, producers and consumers combined) dependent. Redecker, Ala-Mtuka & Punie

(2010) summarise the 4 dimensions of learning 2.0 offered by conversational technologies like social media as:

- Access to content for lifelong learning and professional development,
 - Creation of digital content by users and its publication online,
 - Connection of learners to a community (peers, experts and teachers) which allows them to tap into the tacit knowledge of their peers and highly specific, targeted knowledge in given fields of interests.
- Collaboration between learners and teachers on a given project or a joint topic of interest, pooling resources, expertise and potential of a group committed to a common objective.

The long tail

For Anderson (2006), the “long tail” marketplace phenomenon refers to a new business model enabled by distributed access to consumers and products. For Borgman et al (2008), the long tail refers to the consumers under the distribution curve who purchase harder-to-find items, thus broadening the reachable market size through new dynamics of web purchasing. They elaborate that Web-based companies such as Amazon, Netflix, and Apple iTunes have realised new profits by selling small volumes of hard-to-find items to a large number of buyers. This chapter’s thesis is that university students are appropriating for personalised learning of CC these hard-to-find technologies like netbooks, e-books, academic referencing software, iPhones, MP3 players and web cameras that they purchase outside the university or which are not readily provided by universities. Similarly, Levin & Arafeh’s (2002) national survey of United States youth reports on a ‘digital disconnect’ between internet-savvy students and their schools. Students were using the Internet less in schools than outside their school settings for searching virtual textbooks, backpacks, study groups, and guidance counsellors. Therefore, although conceived as appendages by mainstream university learning structures, web-based conversational

technologies constitute rich multi-media tools and applications that are already leveraging student experiential learning.

Community of Inquiry (CoI)

Web-based conversational technologies are also constructed around Community of Inquiry. In cognitive presence, which includes understanding an issue or problem; searching for relevant information; connecting and integrating information; and actively confirming understanding in a collaborative and reflective learning process (Akyol et al, 2009), collaborative engagement is supported in this domain. This perfectly fits the investigative and transactional character of CC discourses at university. As Redecker, Ala-Mutka & Punie (2010) complements, social media provide learners with opportunities to develop their competences in collaboration with other learners, practitioners and stakeholders, to acquire competences in embedded real-life contexts; and to effectively and efficiently support competence building in a lifelong learning continuum. Social media like blogs, Twitter, Facebook render personalised learning environments (PLEs) that foster a sense of ownership and responsibility for self-regulated learning often understated in LMSs.

Theoretical framework

Community of Inquiry (CoI)

Garrison, Anderson & Archer (2000) developed CoI to explain how deep and reflective learning is practically fostered within a formal educational context. The theory provides a collaborative-constructivist perspective on understanding the dynamics of an online learning experience (Arbaugh, et al., 2008). For a CC course that demands student engagement in critical discourses, collaborative generation of knowledge and well informed critical inquiry of concepts, CoI presents an ideal framework for understanding meaning making processes involved in these practices. The theory comprises three dynamic, mutually interdependent elements: *social presence*, *cognitive presence* and *teaching presence* as shown in Figure 1.

Social Presence



Figure 1: Community of Inquiry, from Garrison, Anderson & Archer (2000)

Social presence relates to ‘the ability of learners to project themselves socially and affectively into a community of inquiry’ (Rourke, Anderson, Archer, & Garrison, 1999). Similarly, Garrison (2009) defines it as “the ability of participants to identify with the community (e.g., course of study), communicate purposefully in a trusting environment, and develop inter-personal relationships by way of projecting their individual personalities” (p. 352). Social presence describes the learning climate through open communication, cohesion and inter-personal relationships (Akyol & Garrison, 2011). Social presence activates informed discourses and critical inquiry by allowing co-present online participants to recognise the common norms and values within which they operate and the mutuality of their collective goals (Rambe, 2012). Social presence must transcend just establishing socio-emotional presence and personal relationships (Garrison, 2007) by ensuring that the group feels secure to communicate openly and coalesces around a common

goal or purpose for a community to sustain itself (Thompson & MacDonald, 2005).

Cognitive presence

Cognitive presence is the “the extent to which the participants in any particular configuration of a community of inquiry are able to construct meaning through sustained communication” (Garrison, Anderson & Archer, 2001, p. 11). It provides a description of the progressive phases of practical inquiry leading to the resolution of a problem or dilemma (Akyol & Garrison, 2011). Since CC undergirds the prognostic assessment of complex problems, issues and challenges of underserved communities and the design of pragmatic interventions to resolve them, cognitive presence provides a heuristic strategy for understanding student critical thinking about collaborative problem solving in technology-mediated environments. Cognitive presence examines the fostering of higher order thinking skills by emphasising practical inquiry and reflection. Critical thinking is conceptualised as the construction of deep and meaningful understanding as well as content-specific critical inquiry abilities, skills, and dispositions (outcome perspective) in as much as it is best judged through individual educational assignments (process) (Garrison, Anderson & Archer, 2004).

Teaching presence

Teaching presence involves the design, facilitation, and direction of cognitive and social processes for the realisation of personally meaningful and educationally worthwhile learning outcomes (Anderson, Rourke, Garrison & Archer, 2001). Akyol, Garrison & Ozden (2009) emphasise the regulatory and mediating role of teaching presence, which entails three areas of responsibility: design and organization, facilitating discourse, and direct instruction. For Garrison, Anderson & Archer (2001) instructional design and organisation involve the planning and design of the structure, processes, interaction and evaluation aspects of an online course. Facilitation of discourse describes the means by which students engage in interaction building upon the information provided in the

instructional materials (Garrison, Anderson & Archer, 2001). In conversational technologies like collaborative blogs or discussion forums, discourse facilitation involves contributions to the discursive environment through postings, comments on peers' posts, provision of news updates and engagement with resources. Such engagements include making objective judgements on peer's postings, expecting students to provide evidence for arguments they make and validating of students' views by their peers.

Research Questions

Since this study investigates the appropriateness of web-based conversational technologies in the realisation of CC, the following question is raised: In what ways are *Web 2.0 technologies appropriate for the promoting of critical citizenship discourses in university contexts?*

Case Study

The study employed a case study approach to explore the appropriateness of Web-based conversational technologies in CC discourses. A case study is considered appropriate when the researcher's intention is to immerse himself /herself in the activities of a small group of people in order to obtain an intimate familiarity with their social worlds and to look for patterns in these participants' lives, words and actions in the context of the case as a whole (Fouche & Schurink, 2011, p. 320). A class enrolled for a Global Citizenship: Learning for Social Justice (GC-LSJ) programme at the University of Cape Town was examined to understand the CC discourses and thinking processes that it engaged in an blended learning environment. This extra-curricular programme strived to anchor students as future leaders in the enterprise of responsible, active citizenship and to nurture in them a deep, sustained passion to serve surrounding underserved communities. The study examined student interactions (student-peer, student-lecturer, student-content) in three blended online environments (blogs, discussion forums, chat rooms)

to distil the meanings behind their textual resources (messages, comments, views).

The GC-LSJ Programme: An Overview

The programme emphasised two overarching goals namely, the fostering of an engaged citizen on global issues and developing practically oriented action (social activism) among students to ensure the delivery of social justice in their communities. It called upon academics and students to systematically and pragmatically respond to the real needs of surrounding communities, particularly those marginalised from developmental initiatives. The Programme whose pilot phase was completed in 2010 with heterogeneous students from varied streams (ranging from undergraduate students to postgraduates) strived to blend face-to-face contact (lectures, reflective activities, events and seminars) with collaborative and reflective online learning activities. Its main objectives were to:

- Develop deep levels of engagement on global citizenship and social justice among students by making experiential and practice-based learning integral parts of the critical enquiry of concepts, issues and constructs.
- Foster responsive leadership among university graduates through prioritising realistic, pragmatic interventions for confronting deprivation and social injustice and
- Harness student experience (past and present) and knowledge of volunteering as levers for transforming their communities and realising social justice.

The Programme had two Modules: *Global Debates, Local voices* and *Thinking about volunteering: service, boundaries and power*, which were both anchored in critical scholarship on global issues, execution of social justice and rendering students practical experiences of contributing and impacting their communities. Both modules had a strong social change component as they sought to foster hands-on experience

among students engaging in global citizenship discourses. The first module had four main themes: *Debating Development; War and Peace; Climate Change* and *Africa in the Globalised world*. Unsurprisingly, Module 1 emphasised inter alia, student engagement with global debates, reflection on their prior personal experiences of developmental issues /volunteering/service, participation in enriching, collaborative learning activities, critical questioning practices and constructions of new knowledge drawing on learned content/experiences.

Module 2 involved student participation in service and volunteering and comprised these themes: *self and service, contexts of inequality, the ethics and paradigms of service, development and sustaining new insights*. For this module, students drew on their prior and present experience of volunteering to effectively serve their communities, critically reflect on constructs and issues and write up reflective papers.

Module 1 activities

To render knowledge-centred learning environments, students were expected to participate in reflective seminars, Facebook group forum discussions, make blog entries and chats, complete learning tasks based on identified themes, participate in learning events and contribute to opening and closing discussion sessions. These activities promoted:

- ❖ Student identification of local communities needs / challenges and their formulation of appropriate interventions to redress them,

- ❖ Meaningful participation in collaborative learning activities like watching brief films and animations on community engagement, and

- ❖ Critical questioning practices (posing, responding to and interpreting questions) that prompted student construction of their

own knowledge and interpretations drawing on learned content/experiences.

Module 2 Activities

In Module 2, students were expected to draw on their prior and present experience of volunteering and service acquired through their partnership with local organisations within the university to share their knowledge and experiences. They also sought guidance from these organisations to develop the social and intellectual capital necessary for effectively serving the communities. The learning activities included:

- 15 hours of community service,
- 12 hours of reflective face-to-face sessions,
- 2 short reflective papers and
- Self-reflection in blogs and commenting on peers' blog posts.

Data mining: Researcher's observations of "soft data"

For both modules, students were expected to engage in CC discourses via the aforementioned online environments (Facebook discussion forums, discussion forums and blogs). The postings constituted student reflections and discussions of issues that they engaged with in class. Given the variability and fragmented nature of postings students made, the research challenge was to sift and synthesise this "soft data." Soft data comprises observations that are generated by humans [...] through natural language, textual data and speech signal (Laudy, 2011, p. 4). As such, the findings presented include the researcher's reflective accounts on the multiple, fragmented postings from students on critical citizenship themes, which ranged from discourse on development, climatic change to service learning issues. The soft data was mined, printed in MS word, categorised and analysed using community of inquiry (CoI) concepts.

Table 1 illustrates the practical application of CoI concepts to the different student postings across the three online spaces.

Since soft data comprises “qualitative knowledge from the experimentalist that cannot be used directly as exact numbers” (Seibert & McDonnell 2002, p. 2), these data sets cannot be used to make broad generalisations about the discourses of CC beyond the context of the study (that is, the pilot phase of the programme investigated in the current study). While Fouch`e & Schurink (2011) submit to the challenge of generalizability of case study results and postulate that audit trails and natural history provided by the researcher can serve as proof for the rigorousness of the research process. Therefore, the contextual background and the researcher’s reflective accounts of student postings suffice to improve the external validity of the study.

Table 1: Application of CoI concepts in an online learning environment

Elements	Categories	Indicators and examples of student postings	Researcher’s comments
Social Presence	Effective Expression	<i>Emoticons</i> “Never assume that what you’re doing is enough” My UCT Global Citizenship: Leading for Social Justice turtling...Inspired! [Student name]	Student deploys inverted commas, ellipses, and exclamation marks to express her insatiable desire to engage more
	Open communication	<i>Risk-free Expression</i> If you agree that South Africa’s current response to climate change is ineffective and leaves much to be desired and that we need a stronger and more effective South African response to climate change, sign the petition at Cleaner Climate Campaign - The Petition Site www.thepetitionsite.com [student name]	Democratic expression and collective social action through petitions
	Group Cohesion	<i>Encourage Collaboration</i> [...] the founder of Future Cape Town, a social media movement aimed at inspiring citizens and stimulating debate about the city today and into the future. What makes Cape Town a liveable...[student postings] [...] ‘Systemic risk’ translated into Marxist terms is ‘the	

		internal contradiction of capital accumulation"! I also think the last point, that as academics, thinkers, it is our duty to change our ways of thinking is absolutely 100% spot on. How do we fight a fight against thought? (Student forum postings). Hey everyone, check out Meat Free Monday. Let's do our bit to mitigate the effects of climate change (Student forum posting on Facebook).	Public announcements on upcoming critical citizenship events Raising collective awareness about the need for mental transformations. Use of collective pronoun "we" affirms group affinity / identification. Encouraging collective social action
Cognitive Presence	Triggering Event	<i>Sense of Puzzlement</i> <i>Why I'm no patriotic diebard - Times LIVE</i> www.timeslive.co.za <i>I am not proudly South African. There, I said it; it's off my chest.</i> <i>I will not [...].</i> <i>Is vigilante justice, justice? In a shantytown near Johannesburg, an angry mob committed a horrifying crime that was caught on video.</i> Watching the Murder of an Innocent Man www.nytimes.com <i>(Student posting).</i>	Student raises controversy about his perceived lack of patriotism. Puzzlement about the unwarranted

	Exploration	<i>Information Exchange</i> <i>On the climate change article; as people rightly point out weather & environmental fluctuations happen all the time and floods & droughts aren't new. But climate change affects these patterns; every few years SA has a bad drought in the centre of the country which is perfectly natural. What climate change is doing is moving these fluctuating droughts further east, making them more widespread and more intense (Lecturer's Facebook discussion forum posting)</i>	murder of an innocent man raises critical questions about the horrors of mob justice.
	Integration	<i>Connecting Ideas</i> <i>Climate fund expected to get the green light - Times LIVE</i> <i>www.timeslive.co.za</i> <i>Signatories to the convention first proposed the fund - aimed at helping developing countries to initiate projects, programmes, policies and other activities aimed at mitigating climate change - in Copenhagen, Denmark, in 2009. They discussed it again in Cancun, Mexico, last year. (Student posting)</i>	Lecturer provides background information that challenges students to engage with factual knowledge in the article
	Resolution	<i>Apply New Ideas</i> <i>According to a new report published by the United Nations Food and Agriculture Organization, the livestock sector generates more greenhouse gas emissions as measured in CO2 equivalent – 18 percent – than transport. It is also a major source of land and water degradation. How does meat contribute to greenhouse gases? [...] Because of their unique digestive system, ruminant animals (e.g. cattle) are the major emitters of methane. Beef cattle account for about 70 percent and dairy cattle for about 25 percent of these methane emissions. If beef and dairy cattle numbers increase, methane emissions will also increase. Methane can also be produced by the anaerobic (without oxygen) decomposition of manure [URL link provided]</i> <i>http://www.sciencedirect.com/science/article/pii/S0959378003000827</i>	Connecting pedagogical knowledge on climatic change to supranational initiatives on the subject Practical application of knowledge to real life situations

Teaching Presence	Design & Organization	<i>Setting Curriculum & Methods</i>	
	Facilitating Discourse	<i>Sharing Personal Meaning</i> About time we act more and talk less (Educators' posting)	Educators' expression of concern about limited practical action
	Direct Instruction	<i>Focusing Discussion</i> The Earth Is Full: www.nytimes.com . We are in denial about the severity of the climate crisis and just how big of a response is going to be needed (Educator's postings on Facebook forum) This is really informative about the facts of world trade, and how it disempowers many poor countries and farmers - take a look! http://www.oxfam.org/en/campaigns/trade/rigged_rules (Student posting)	Foregrounding discussion on the size of practical solutions necessary.

(Adapted from Garrison, 2007: p 65)

Presentation of findings

It is critical to note that student and lecturer posts captured and represented the three CoP concepts in different dimensions and intensity. More importantly, some of the postings were URL to important news on different global issues while others were news feeds that were imported into the students' discussion forums for other students to comment on and thus fostering a productive learning community. These issues are discussed in greater depth in the subsequent sections.

Social presence

Social presence reflects the development of affective social and interpersonal relationships in the community (Akyol & Garrison, 2011). It revolves around the "degree to which participants in computer-mediated communication feel affectively connected to one another" (Swan & Ice, 2010, p. 1). In this study, social presence manifested in student feelings about their availability and readiness to communicate and engage with peers on issues of mutual concern. It

found expression in their mutual recognition of each other as members of a collective online community and their common obligation to contribute, inform, engage with, and critique their online community's (peers, senior students and academics) ideas and views. Three main themes were dominant under social presence namely, *affective expression*, *open communication* and *group cohesion* and these are discussed in subsequent sections mainly because they mirror conversational technologies' power to shape and influence knowledge sharing and the development of organic online learning communities.

Affective expression

Affective expression is the ability of online learners to project themselves through text-based verbal behaviours such as the use of para-language, self-disclosure, humour, and other expressions of emotion and values (Boston et al, 2009). One such accoutrement of social presence awareness on Facebook forums was student desire to express themselves emotionally through para-verbal cues like smiley, exclamation marks, ellipses, and reduplicative words. The following examples of exhortatory messages are indicative of affective expressions:

If you're in need [of] a little inspiration going into exams, watch this! Citizenship, mobilization, democracy: all our favourite things :)

100% against global warming, it starts with me!

"Never assume that what you're doing is enough." My UCT Global Citizenship: Leading for Social Justice turtling...Inspired!

The muting of verbal cues in computer-mediated communication necessitates their replacement with these primordial written communication cues to suppress the inadequacy of non-facial interaction. The use of exclamation marks denotes a commitment to inspire, the same way voice modulation (or even projection) is used to inspire interactants in face-to-face communication. The smileys, inverted commas and ellipses denote excitement, an affirmation of the essence of the message being conveyed and pauses as would be conveyed in spoken language respectively. In verbal communications, pauses are intuitive and unconscious, so the non-verbal nature of

online communication necessitated pauses to inadvertently solicit peers' validation through talk-back and their grasping of the message. These online strategies point at the different techniques employed in Web 2.0-based conversations to overcome the limitations of online communication. They also point at conversants' attempts to establish common genres of democratic communication on CC and enrich textual engagements in the absence of non-verbal communication to validate their linguistic behaviour.

The motivation to challenge complacency embodied in the statement "never assume that what you're doing is enough" suggests a corrective and redistributive approach to CC and achieving social justice. It perfectly fits within the classification already articulated on using activism to overcome the constraints of discrimination, social injustice and inequality (DeJaeghere, 2009; Osler, 2000). These postings also point to nascent conversations on moving beyond philanthropy to tackling head on the inequalities ingrained in the South African society occasioned by multiple issues like the Apartheid legacy, failure in the trickledown effect of national policies, and structural dysfunctions in government and civil society interventions that lead to marginalisation of the masses in development processes.

On student blogs, social presence unfolded through tutors' guidance to students to draw on concepts and constructs covered in class during engagement. Their moderation of blog discussions included the establishment of ground rules of online communication, exhortation of group members to contribute to peers' blogs, clarification of concepts and summarisation of the main themes in the students' postings. Some students also used in class resources (for example, videos watched, URLs and seminars attended) to make useful propositions about introducing volunteering and service to the first years in line with the university's vision of servicing underprivileged communities.

In discussion forums, icebreakers like the "let's play the balloon game" discussion thread were meant to test student problem solving skills and their understanding of global issues. In this game, students were expected to save one personality out of three personalities

(namely, a great African statesman, an American celebrity and an African woman with many children) from an impending balloon air crash. Not only did tutors test student understanding of international affairs, social justice and perceived deprivation, but they also assessed the overall threshold of student participation. In this game / dilemma, the tutor admonished one online participant for failing to apply her mind critically and constructed such unsophisticated behaviour as academic “cheating.” Student understanding of international affairs was also tested—for which one student professed ignorance by insinuating that the late former President Julius Nyerere was currently on retirement. Ice breakers, therefore, tested students’ level of critical thinking about international affairs, assessed their conceptions and misunderstandings of global citizenship and service concepts, prognostically evaluated their problem solving skills analysing their ability to address complex dilemmas and provide justifications for their decisions.

Open communication

Open democratic expression played out in student projections of their perspectives and views towards public issues on CC and service. For instance, some students were disgruntled about the way the South African government was handling the discourses on climatic change. They were concerned about the government’s limited bargaining power in global decision making including supranational interventions aimed at addressing global warming. As one student posting suggested:

If you agree that South Africa’s current response to climate change is ineffective [...] and that we need a stronger and more effective South African response to climate change, sign the petition at Cleaner Climate Campaign - The Petition Site.

The attempt at influencing peers’ feelings and perceptions about national interventions on climatic change and their mobilisation to engage in political action (through the signing of petitions) are all indicative of the power of Facebook group forums to shape and

convey student views and expectations about public CC matters. Such actions are indicative of student attempts at effecting activist and political literacy based approaches to critical citizenship often lacking in critical citizenship and service learning projects. Service learning projects, for instance, tend to foreground volunteerism at the expense of political activism, thus undermining endeavours directed at improving public officials' accountability and responsibility to the public in general. As such, the signing of petitions seemed to bring a fresh, innovative perspective to CC discourses thanks to web based discursive technologies' deliberative potential.

Group cohesion

Web 2.0 technologies were also critical instruments for raising collective awareness about the epistemic shifts expected of educators and the necessity of "thinking on their feet" with regard to the application of traditional theories on globalisation like Marxism. The following statements are indicative of student desire to communicate the value of creative thinking about global citizenship issues:

Particularly love, 'systemic risk' translated into Marxist terms is 'the internal contradiction of capital accumulation'! I also think the last point, that as academics, thinkers, it is our duty to change our ways of thinking is absolutely 100% spot on. How do we fight a fight against thought? (Student forum postings)

Hey everyone, check out Meat Free Monday. Let's do our bit to mitigate the effects of climate change (Student forum posting on Facebook).

The value of challenging established thought on globalisation can be located in practical criticism and cognitive dimensions of CC, where emphasis shifts from direct "confrontation" with flawed and problematic public decision making towards enriching the collective minds of learning communities through critical open dialogue and thought provoking engagements. The appropriation of the collective pronouns "we" and "our" in the first posting and "let us" in the second posting are all indicative of these students' identification with their Facebook group-as a collective learning community. The proposal of "Meat Free Mondays for everyone" as a mitigating

measure for combating carbon emissions that contribute to climatic change invokes a desire to work cooperatively with one's online community and to influence their CC psyche.

Cognitive presence

Triggering events-raising intellectual curiosity

For Garrison, Anderson & Archer (2004) a triggering event reflects the initiation phase of critical inquiry and it involves the emergence and recognition of an issue, dilemma, or problem from experience. Student experiences of service and reflective observations on Facebook forums, discussion forums and blogs contributed to the recognition of these issues, dilemmas and challenges. Web 2.0 environments also served as reflective spaces for leveraging students' intellectual curiosity and puzzlement on issues of social justice and citizenship. Issues about a general lack of patriotism and vigilante justice were among the major talking points. One student who was upset about the prevalence of mob justice in some South African informal settlement (euphemistically called shanty towns) posted online a story and homemade video in which an innocent foreign national was killed by a mob. The man was mistaken for a thief who snatched a cell phone from one of these informal residents:

Is vigilante justice, justice? In a shantytown near Johannesburg, an angry mob committed a horrifying crime that was caught on video. Watching the Murder of an Innocent Man
www.nytimes.com

Why I'm no patriotic diehard - Times LIVE
www.timeslive.co.za

I am not proudly South African. There, I said it; it's off my chest. I will not [...]

The unwarranted meting out of 'vigilante justice' on innocent people raised critical questions about why some sections of the South African society resorted to horrendous, illegal methods of combating crime. Moreover, it raised critical issues about whether the legacy of

Apartheid had bequeathed upon society the embrace of hatred, diversion of anger from government service delivery shortfalls and whether mob justice was indeed a manifest expression of social justice. Although these serendipitous conversations were brief and fragmented, they however projected the Facebook discussion forum as a space through which public dialogue could be initiated on issues students often lacked the courage and confidence to address in face-to-face or publicly.

On blogs, students tussled with perceived contradictions and puzzles of real world experiences of service. For instance, in a blog post entitled “Does it count as service”, a female student expressed the contradictions between voluntarism and medical students’ assistance of women in labour. She was dismayed by obstetrics students who despite their educators’ expectation for them to assist with the delivery of 15 mothers in labour, they were often tempted to assist mothers undergoing normal delivery while neglecting those in early labour or with complications. All this bewilderment served to help students appreciate the provisionality of knowledge and the importance of critical discourses in the generation of new knowledge. The challenge, however, was that these political-ethical issues often failed to generate the much-needed responses from peers for various reasons-unfamiliarity of some students with the disciplinary complexities in question and the difficulties of resolving such perennial ethical problems and lack of incentives (for example, marks) for public participation in online discussions.

Exploration-generation of practical knowhow

For Garrison, Anderson & Archer (2004), exploration involves student deeper understanding of the problem and the shifts from private, reflective world of the individual and the social exploration of ideas (critical discourses). In the current study, exploration played out in the mutual exchange of factual knowledge about broad concepts discussed in class ranging from global warming, climatic change, poverty reduction to supra-national interventions on global citizenship issues. Students discussed why recurrent droughts were

becoming a perennial feature of South Africa agriculture and the extent to which meat products contributed to carbon emissions that exacerbate global warming. The citation of international news bulletins and research by some multi-lateral organisations like United Nations' Food and Agricultural Organisation (FAO) consolidated student scholarly deliberation of factual knowledge that extended their classroom experiences of knowledge exchange.

In discussion forums, some students engaged in exploration in two ways: through 1. understanding the theoretical underpinning of their arguments, and then using theoretical constructs and concepts to develop a more informed explanation of a problem or issue. For instance, one student employed the concept of volunteering and equated it with personal sacrifice and “martyrdom” in service of underprivileged communities. 2. The use of current political developments to interpret complex dilemmas and issues. For instance, some students drew on recent events like the African Students Leaders' Summit in their exploration of the lack of visionary leadership and political apathy among youth. Others also raised the argument about the need to integrate community-based knowledge into scientific discoveries, and to establish the role and place of the Green Week initiative in climatic change debates.

Integration

Garrison, Anderson & Archer (2004) define integration as the construction of meaning from the ideas generated in the exploratory phase. This involves assessing the applicability of ideas in terms of how well they connect and describe issues or events under consideration. This application of knowledge played out in the discussion of in-class concepts and how they manifested in the practical world. For example, Facebook discussion forums articulated the Climatic Fund that was founded by world nations in 2009 to support the development of projects aimed at mitigating the deleterious effects of climatic change. The emerging discourses around these issues demonstrated the recursive movements between individual self-reflection and critical dialogue in public spaces.

In blogs, some students exhibited pragmatism in their commitment to social action and problem solving. Some volunteers in service expressed the need to address intra-group dynamics that arose from assisting marginalised communities with different levels of understanding and exposure to technology. In the discussion forums, students strived to provide justifications for their arguments. For instance, one student voiced a positive correlation between high birth rates and lack of knowledge of family planning. Moreover, in a problem solving task that required students to provide some justifications for their choice of a personality to be saved from an impending disaster, one student articulated her choice of the personality this way: Bono's nomination for Nobel Peace Prize, being named TIME's 'Person of the Year' and earning a knighthood-as signs of his achievement.

Resolution

Resolution was grounded in the propagation of connectivist knowledge gained from social interactions to real-world contexts. One such practical application of knowledge to real life situations was the need to explain why carbon emissions from automobiles had scientifically lower devastation effects compared to carbon dioxide emissions from animal meat products. Similarly, in the blog post entitled "becoming more acquainted with blogging" a student (blogger) lamented how her abandonment of volunteering upon her graduation could potentially hurt the lives of her beneficiaries. Another blogger also shared his empathic yet enlightening experience of his visit to an urban informal settlement. He expressed the need for collective social action and projected how his privileged background almost obscured his understanding of the underprivileged world. All these are expressions of the cognitive and emotional dimensions of CC discourses occasioned by access to and appropriation of web 2.0 discursive technologies. This is notwithstanding the challenge that these discussions were often fragmented, not directly connected and therefore, lacked the coherence normally expected of scholarly discourses. Undoubtedly,

however, they painted a vivid portrait of students being initiated and socialised into critical discourses about complex CC matters for which closed affirmative answers were inadmissible.

Teaching presence

For Arbaugh et al (2008), teaching presence emphasises instructional design and organisation, facilitating discourse and direct instruction. Instruction design revolved around the setting of global citizenship and social justice goals, establishing netiquette in online environments and informal assessment methods on volunteering and service. Facilitating discourse involved lecturers' encouragement of students to join the different discussion forums, their provision of background materials to support meaningful interaction and tutors' moderation of Facebook group forums and online discussion forums. Direct instruction undergirded tutors' summarisation of student ideas on Facebook discussion forums, identification of student misconceptions and their provision of scaffolding material (videos and URL links to controversial subjects) for collaborative engagement with students. As Meyer (2003) postulates, educators may need to be more directive in their assignments for threaded discussions, challenging the participants to resolve a particular problem, and pressing the group to integrate their ideas.

Discussion of findings

All the three CoI constructs were well represented in student discourses and dialogues on CC and social justice. However, in terms of frequency and explicitness, social presence and cognitive presence featured more prominently than teaching presence, which seemed more embodied and thinly distributed in educators' instructional processes in different learning platforms. Teaching presence seemed to have more resonance with organising and effecting constructivist teaching methodology interpolated by occasional direct instructional strategies-like provision of learning events and provision of additional learning materials on CC in diverse formats. As such, to the extent that Web 2.0 conversational technologies opened and broadened

conversations about multiple CC issues like social justice, deprivation, inequality and inadequate social action to address the social conditions of marginalised groups, issues students could not otherwise confidently talk about in public, these technologies served as effective spaces for opening dialogue on CC issues.

The explicit effectiveness of discursive technologies in inducting and sustaining student engagement in CC discourses also played out in various expressions of social presence among students. Social presence unfolded in four main ways namely: open, democratic expression of student views, mutual recognition of their class as a cohesive online community, promotion of collective awareness about international issues and exhortation of peers to take collective social action on issues of global citizenship. Given the inadequacies of online communication with regard the expression of feelings and emotions through body language, students employed self-selected para-linguistic cues to convey their messages. As Walther (1992) suggests, given the nonexistence of bodily gestures, tonal expressions, or visual and nonverbal cues, computer mediated communication (CMC) is generally thought to be low in social presence relative to face-to-face interaction. In spite of these limitations, students employed emoticons, inverted commas, ellipses, smileys and other lexicon-grammatical styles like duplicatives to convey their feeling about CC issues. Such creative expressions symbolise students' potential to deploy conversational technologies to support new, transformative genres of discourse on

CC in collective spaces

Students also exploited conversational technologies to pull an activist stunt on multiple global citizenship issues. They registered their discontent with the South African government's stance on climatic change and mobilised peers to sign an online petition entitled *Climate Campaign - The Petition Site*. Another student proposed the advancement of new practical applications of Marxist thinking to concepts like "systemic risk." Overall, these articulations helped to project Web 2.0 technologies as productive conversational spaces for critical reflection and collaborative engagement on CC. These

findings address concerns of previous research about the paucity of evidence on how learners in a specific social, cultural, or educational environment who possesses unique learning styles develop and enhance their communications through CMC (Gibbs & Bernas, 2007). However, while the disproportionate involvement of senior academic on these web environments reinforced a “hands off approach” to engagement in student regulated spaces, it resulted in the unintended underutilisation of the deliberate potential of student discussions. A more facilitative role of educators in student argument building, balanced engagement and open critique was critical to leverage the productive value of Facebook forums, blogs and discussion forums in CC discourses.

Cognitive presence was deeply implicated in student engagement via conversational technologies and it manifested in four ways: shared intellectual curiosity (sense of puzzlement), mutual exchange of academic information, connections to peer-generated knowledge and its practical application in situated contexts. Puzzlement emerged from student engagement in politically sensitive problems and issues. Although multiple issues were explored, those that attracted more critical, collaborative discussions were the status of vigilante justice in social justice debates, droughts and floods’ impact on climatic change, greenhouse gases generated by livestock and their impacts on global warming and the discourses on the Climatic Fund. As such, through their online learning communities, students also found opportunities to articulate and critique various forms of tacit knowledge. As Callahan (2006) postulates, learning communities of practice offer an effective and flexible approach to the difficult task of managing tacit knowledge, which often comes in the form of intuition, hunches, heuristics, and inherent talent. The complexity of applying tacit (/personal) knowledge in CC lies in the multiple interpretations of the concept and its limited expressions in real life. As Boisot (1999) aptly observes, two expression of tacit knowledge are: 1. Issues that are not articulated because nobody grasps them fully; and things that are not deliberated on because although some people understand them, they cannot costlessly articulate them. The exploration of social justice and CC using web-based conversational

technologies falls within the second domain as these least understood concepts are very costly to deeply understand, even if common ground for their exploration could emerge.

In CoI theory, teaching presence involves the design of learning materials, the facilitation of learning and provision of instruction. While educators directed the execution of learning events in class and the conduct of reflective seminars, they only scaffolded student learning in online learning environments without direct involvement. They provided background materials (news of upcoming CC events, latest citizenship news or articles) that triggered conversations among students, which the two tutors moderated in discussion forums and Facebook group forums. The information triggers they provided enunciated the sharing of meaning among students and motivated their critical thinking about issues being investigated. While literature suggests that rather than recreating classroom discussions in which a limited number of participants engage, asynchronous tools theoretically allow the involvement of all participants (Paulus, 2006), evidence suggest the contrary. Our experience is that although the rate of participation was comparatively higher than what would be expected of traditional classes hinged on the instructivist mode, participation was not universal and overwhelming. Some students lurked online, preferring to navigate and meditate on peers' posts without directly contributing or critiquing them.

Implications for pedagogy

While the appropriation of asynchronous Web 2.0 conversational technologies (Facebook discussion forums, blogs and discussion forums) broadened open participation of students, more intellectual curiosity about CC issues and collective generation of knowledge, there were multiple grey areas that needed to be improved particularly the intellectual rigor and coherence of discussions. Consequently, the setbacks of engagements on these spaces and their implications for pedagogy are discussed in the following sections.

Well structured, coherent conversations

While multiple postings were made on Facebook group forums and discussion forums that addressed various issues, the discussions were often fragmented and not linked to one central theme to ensure coherence and consistency of arguments. This lack of structure with regard to the use of Web 2.0 tools is voiced in other literature. Gerbic (2006) contends that learner involvement in online discussions (forums) is often erratic and tends not to be sufficiently interactive. Berman (2012) attributes the higher use of chat rooms at the University of Cape Town in comparison to other collaborative tools to the absence of a structure in these conversations, which ironically complicates the distinction of casual chat from work-related contributions. Therefore, instructional guidance and support are critical in shaping the discourse of critical citizenship as well as the general flow of the conversations. Chappell (2012) affirms that successful online learning necessitates the active, systematic engagement of students in lively discussion forums as well as an efficient learning community. This view alludes to the need for a formal organised structure of engagement with educator support.

Furthermore, the text-dependent nature of Facebook postings combined with the absence of verbal and visual cues for personal clarification of concepts and issues further explain the fragmentation of the conversations and the need for instructional support. Hew & Hara (2007) observe that in online learning environments, some participants may struggle to explain complex concepts using text-based discussions due to the lack of verbal cues. Tutors are therefore, expected to assume a more proactive, constructive role of guiding discussions step-by step and summarising the main themes of discussions to ensure more systematic organisation, intellectual rigor and fluency of the deliberations. Educators should also assume the central role of encouraging students to critically comment and engage with peers' posts, and contribute new posts to sustain the momentum of discussions.

Leveraging technological confidence

While many blog posts lacked analytical depth and were concerned with student frustrations about a lack of community cooperation during student service, prolific bloggers often transcended these narrations by exposing the contradictions, dilemmas and puzzles that emerged in volunteering and service. Lack of analytical depth in student adoption of other Web 2.0 collaborative tools has also been reported in literature. Evidence of lower intellectual engagement range from limited participation in discussion forums, lack of depth and quality of postings to sporadic, less interactive postings (Gerbic, 2006; Watson, 2008). The tight coupling of blogs with particular course activities and tasks (for example, activities requiring self-reflection on citizenship, engagement in critical collaborative discourses, collective problem solving and digital story telling) could heighten the productive use of these spaces.

The sub-optimal utilisation of blogs and the concomitant need for pedagogical interventions coheres with findings from literature. Ozola & Zeidmane's (2012) study on 118 first year Latvia University students' adoption of e-learning environment in English language revealed that blogs were unpopular among these students. The majority (80%) did not write blogs in their native language or in English (87%). Since student use of other Web tools for finding information or networking with peers was motivated by the integration of these tools into pedagogy (tasks and activities in the course that required the use of Web tools), Ozola & Zeidmane's (2012) study recommends academic staff to introduce didactical methods to improve blog writing. Yet Rambe's (2012) alludes to educator uncertainty about introducing structured pedagogical interventions in conceivably "student controlled" spaces like blogs. The challenge is whether to introduce different spaces which support different interactions or special-purpose spaces for peer-based interactions, where tutors are readily accommodated and educators left out.

Similarly, although many posts were richly experiential in nature, they were often undermined by their failure to draw on theoretical

constructs learned in class in their processes of meaning making. Some students also professed a lack of familiarity with blogging and limited confidence to publicly express their views. This also resonates with established literature. Berman's (2012) study investigated how and how much student learning happens via learning management system collaborative tools at the University of Cape Town. Her findings demonstrate that apart from chat rooms, students across multiple departments generally underutilised collaborative course tools (wikis, discussion forums and blogs). While student development and training in blogging and critical engagement in CC is critical to improving their blogging and writing competencies, the challenge lies in striking a balance between didactic instruction in these student regulated spaces and "fading" of instructional support to enhance student intellectual growth. Although systematic training in argumentation and open engagement are critical at the inceptive phases of online learning, students need to be given more room to manoeuvre in subsequent stages with educator online presence, to enhance their self-regulated learning and personal growth.

Some students alluded to have forgotten their service learning experience due to the lag between volunteering and reflective blogging. Keeping reflective daily logs that would be uploaded on blogs after service or blogging in service would reduce the time lag between service and blogging. As such, educators should train students in productive critiquing of peer's blog posts, developing ownership of their personal voices in public critical discourse and nurturing their communicative repertoires in network-based argumentation. This would involve understanding the premises of arguments, their philosophical underpinning, and nurturing the capacity to critique arguments while respecting the provisionality of knowledge and diversity of positionality.

Clearing misconceptions and misinterpretations

While emotive expressions were admissible in social justice and CC discourses due to the allocative and redistributive nature of these topics, some student emotional critiques however, lend themselves to misinterpretations and misconceptions of peer's views. This finding is

also consistent with findings from literature. Hew & Hara (2007) also suggest that some students may be uncomfortable or reluctant to participate in online environments for fear of being misunderstood or misinterpreted. On the contrary, student contributions (questions, queries, critiques and elaborations) to online learning environments are critical to both the students and educators since they serve as windows into students' understanding ((Hodgkinson-Williams & Ng'ambi, 2009). Embodied in these contributions is information about what is known, what needs to be known, and what could be known (Ibid).

More so, opinion reinforcement seemed to plague many discussions suggesting that some students just participated for the sake of meeting course requirements of online presence. Professional development in meaningful, collective discourse could involve seeking clarifications and justifications for positions taken and expecting student to develop objective judgements based on factual evidence during deliberations. That said, tutor moderation of discussion and their summarisations of discussions to anchor the main themes discussed were commendable.

Chats were the least exploited asynchronous technologies as they were employed to convey academically related messages than to foster deep learning of academic content. Through chats, students shared their worries about information overload in other courses, thoughts on upcoming events, diverse ways of accessing resources (articles, readings), information about submission deadlines and directions to social gathering. Since chats are meant to be lightweight conversational spaces, these conversations were appropriate to prevent the duplication of discursive style conversations in all online spaces.

Conclusion

The current chapter explored the complexity of CC discourses particularly when they unfold in blended learning environments. It therefore, examined the practical application and appropriateness of Web 2.0 conversational technologies for the learning of CC and

social justice in a GC-LSJ course. The study drew on CoI concepts, which are social presence, cognitive presence and teaching presence to understand the potential and appropriateness of Web 2.0 to foster sustainable critical discourses on citizenship and social justice. The findings demonstrated the potential of these social technologies to foster open, democratic expression of controversial subjects that students could not otherwise engage with face-to-face, mutual exchange of factual knowledge, the sharing of tacit knowledge through collective and networked-based strategies as well as insipient forms of critical inquiry. However, the limitations of engagement with Web 2.0 conversational technologies included lack of critical depth of the discourses, fragmented discussions which lacked a consistent structure and occasional opinion reinforcement. The implications of these issues for pedagogy were also explored.

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Towards a blended mobile social media model to deepen authentic, contextualised learning in South African higher education

Patient Rambe

Abstract

A profound technological disjuncture exists between South African higher educational institutions (HEIs) deeply anchored in traditional learning management systems (LMSs) and their techno-savvy students who are naturally immersed in mobile learning environments. More so, educators have sub-optimally exploited the institutionally sanctioned LMSs diminishing them to information portals rather than productive, discursive spaces for socially constructive engagement, critical discourses and academic networking. These pedagogical limitations arise from the technical constraints of LMSs namely, their failure to sufficiently extend learning beyond institutionally sanctioned networks, their often “rigid” management of learning through lecturer-regulated controls of the system and limited agency of students in self-generation of content and formation of self-regulated learning networks. Consequently, with limited examples of best practices of use of LMS for deep engagement, students tend to reproduce these superficial applications of technologies without problematizing or transforming them. On the contrary, mobile learning environments have become an ambient rendezvous and natural habitat for student engagement in higher cognitive functions of informed reasoning, critical reflection and argumentation. This chapter, therefore, bridges the engagement gap between traditional LMSs and mobile learning environments by proposing a blended mobile social media learning environment, itself a convergence of traditional LMS mobile and social media learning

environments. Traditional LMS's functional elements are integrated into a mobile social media environment to develop a blended mobile social media environment that offers ubiquitous learning across transitory spaces, contexts, and temporal times. This complex model, mutually constituted by the intersection of technological, academic authority and engagement domains is proposed to overcome the perennial challenges plaguing South African higher education namely, constrained access to academic resources, academic underpreparedness and cultural diversity of learners.

Introduction

Blended learning (BL) has been a staple discourse among educators and educational technologists for over a decade (Osguthorpe & Graham, 2003; Graham, 2006; Allen & Seaman, 2007; Hayslett, O'Sullivan, Schweizer & Wrench, 2009; Bonk, 2010). The heavily contested debate on BL has evolved from the degree of mix (Allen, Seaman, & Garrett, 2007; Bonk, 2010), perceived contextual flexibility of access to learning resources and fluidity of learning expectations (Sangi, 2009; Ramsey, Hawkins, Housner, Wiegand, & Bulger, 2009), perceived intentions and style of integrating technological tools (Graham, 2006; Thorsteinsson & Page, 2007; Aytac, 2009; Hayslett, O'Sullivan, Schweizer, & Wrench, 2009) towards an increasing consensus on prospective variability of blends depending on a cluster of considerations. These considerations range from technological provisions, pedagogical intentions, learner and educator expectations, the scale of technology rollout involved, time, energy and commitment to be invested in designing the blends. As such, the debate on the appropriate mix and combinations of blends remains an open, tightly contested mining field.

What is clear about the BL debate, however, is the central place that traditional learning management systems (LMSs) occupy as the mainstream transmission media and knowledge bridge between educators and learners' in knowledge production processes. The value of LMSs in instructivist learning is underpinned by the multiple

functions that these learning portals play in content generation, aggregation, transmission and evaluation at university. From a *technological affordance perspective*, LMSs enable the delivery of learning content and resources to university students, potentially render opportunities to increase interaction between educators and students, and foster student evaluation by providing immediate feedback on online assessments (Martin & Tutty, 2008). From a *pragmatic perspective*, e-learning systems like LMSs are credited with overcoming overcrowding and insufficient facilities for the delivery of traditional-style education to all learners (Alkhalaf, Nguyen, Nguyen, & Drew, 2011). LMSs are also institutionally supported for quality assurance purposes, for instance, allowing audit trails on student activities and performance and providing study guides to learners. Consequently, LMSs like Blackboard and Open Source brands of LMSs have constituted the mainstay technological architecture at South African Universities for dealing with the challenges of access and extending educational resources to students and realising meaningful engagement.

In spite of the hailed benefits of LMSs, they are perceptibly ill positioned to tackle head on the emotional, relational and social engagement needs and priorities of today's youth that has seamlessly integrated their academic aspirations into their relational needs. Veletsianos & Navarrette (2012) aptly observe that LMSs are often criticised for their application as static repositories of content that fail to sufficiently render some robust social experiences found on platforms that have garnered societal interest and appeal. Similarly, Attwell (2007, p. 9) argues that LMSs were designed like "walled gardens," which perpetuate the isolation of academic institutions from the wider outside community. He elaborates that the major implementation of such education technology has not encouraged social networking and creativity but rather reinforcement the management of learning and isolation of networks. Literature suggests the value of social technologies in professional collaboration, inquiry practice, reflection and personalised learning (McLoughlin, 2011), and in enrichment of the content and information being shared (Hamid, Waycott, Chang & Kurnia, 2011).

McLoughlin & Lee (2007) argue that social technologies enhance connectivity and social support, collaborative engagement and information sharing, information aggregation and content modification including the development of student voice in knowledge building. Therefore, while LMSs are credited for deepening student selective attention on authentic content and subject-related matters, they are insufficient for the fostering of deep engagement, social learning and affective expression of personal knowledge. On the contrary, social media is acknowledged for its potential to support the “affective component which deals with the emotional and social regard the student has toward the institution and the act of studying (social engagement)” (Wise, Skues & Williams, 2011, p. 1333).

More so, university educators’ dependence on LMSs seems antiquated in light of the networked students’ social learning practices that unfold in social technologies like Facebook, MySpace, micro blogging tools (Twitter), instant messaging services (MXit, WhatsApp) and multimedia publishing tools (YouTube, Skype). The phenomenal uptake of social media comprising an estimated 5.3 million South African users on the Facebook network coupled with the dominance of the 18-24 age group on mobile social media (Social Bakers, 2012) aptly suggest that college students constitute a sizable number of mobile social media users. Similarly, the tremendous appropriation of mobile phones by South African youth compounded by student underutilisation of LMSs further proves that prospective higher educational gains do not necessarily lie in traditional brick-and-mortar delivery modes but rather in mobile and social technology applications and tools. For example, Africa recorded the highest percentage increase in global Web page views from mobile devices compared to the other continents from Jan 2011 and Jan 2012 (StatCounter, 2012). Similarly, given that 91% of SA Internet users have Facebook accounts (Chatterbox Digital, 2012) and the majority of Facebook users access it via mobile devices, it can be envisaged that unprecedented amounts of digital educational resources are being accessed via mobile social media. However, given that there are still many South African students who do not have

SMART phones for accessing Facebook, the integration of mobile social networking with traditional environments like LMSs would ideally cater for those at risk of being excluded by the move towards cloud computing and / mobile social networking. Overall, however, educators are ideally positioned to exploit the huge presence of university students on mobile social media through the complementation of traditional LMSs with mobile social media technologies. The increasing trajectory of mobile social networking and the explosive uptake of mobile devices by students imply that there is scope to devise new learning environments and models that address these new social phenomena to optimise deep authentic learning.

The rest of this chapter will be structured as follows: a brief research method is provided, the concept of blended learning is explored, the status of LMSs in South Africa is articulated, mobile learning scenarios in that country are explored, mobile social networking and principles for the design of effective blended mobile social media environments are provided, a model of a blended mobile social media environment is then proposed, implications for pedagogy are explored and a conclusion is rendered.

Research Method

Since the point of departure of this research is to demonstrate the inadequacy of learning management systems (LMSs) as tools of meaningful academic engagement, with the intention to provide effective educational complements (blends) including the constitution of these blends, document review best fitted such an investigation. Document review is a systematic procedure for evaluating documents—both printed and electronic (computer-based and Internet-transmitted) material (Bowen, 2009). It involves an examination and review of textual materials (research articles, including diaries, media reports, blogs) to learn about past intentions and events in relation to their meaning and value (Letts et al, 2007). In this work, the rationale of blended learning, the academic value of appropriating LMSs and for arguing for effective blending of LMSs

are explored to provide a unified framework for understanding and justifying the blending of traditional (LMSs) technologies with new technologies (mobile and social media technologies).

In document review, documents are reviewed considering their context of production and the researcher engages in an in-depth learning process, becoming a critical editor of texts (Ibid). Researchers typically review prior literature as part of their studies and incorporate that information in their reports (Bowen, 2009) to provide a nuanced, systematic analysis and interpretation of the issues that emerge from these multiple data sources. In this work, the researcher examined a variety of documents ranging from books, technical reports, internet-based literature, articles, magazines detailing the strengths and pitfalls of LMSs, mobile learning and social media environments to find areas of possible complementarities. These complementarities were critical to the establishment of a model that blended these three learning environments.

The effect of document review is to provide a coherent process of meaning making out of the stock of documents provided (that is, a document analysis). Like other analytical methods used in qualitative research, document analysis requires that data be examined and interpreted in order to elicit meaning, gain understanding, and develop empirical knowledge (Corbin & Strauss, 2008; Bower, 2009). As such, the examinations of diverse documents resulted in an in-depth understanding of the discourses on blended learning, the significance, current status, direction and problems of blended learning at South African higher educational institutions (SA HEIs), the academic value and pitfalls of mobile learning, the potential of mobile social networking to complement traditional LMSs, principles for the design of blended mobile social media environments including their constitution.

Blended learning (BL)

Singh (2003) conceptualises BL as a rich set of learning strategies or dimensions that can be integrated in these ways: *offline with online*;

self-paced with live, collaborative; structured with unstructured and custom content with off-the-shelf. The focus is on modes of interactions and their varied structure and not necessarily the proportion of content transmitted via a designated platform or learning environment. Alternative definitions foreground the delivery mode (/media) rather than the learning environment. For example, Valiathan (2002) characterises BL as any solution that combines some different delivery methods like collaboration software, web-based courses and knowledge management practices. Comprehensive definitions embrace the complexity of BL by emphasising the bridging of different learning approaches, diverse delivery methods, multiple media and/ learning environments to ensure efficient and effective realisation of learning goals. For instance, the current work identifies with Driscoll (2002, p. 54) who articulates that BL has four different meanings:

- To combine/mix modes of Web-based technology (e.g., live virtual classroom, self-paced instruction, collaborative learning, streaming video, audio and text) to accomplish educational goals.
- To combine various pedagogical approaches (e.g., constructivism, behaviourism, cognitivism) to produce an optimal learning outcome with or without instructional technology.
- To combine any form of instructional technology (e.g., video tape, CD ROM, web-based training, film) with face-to-face instructor-led learning.
- To mix/or combine instructional technology with actual job tasks in order to create a harmonious effect of learning and working.

Notwithstanding its diverse interpretations, the central point in BL is creating an appropriate and effective mix/combination of learning strategies, environments and tools to support improved pedagogical delivery. The other critical consideration of BL environments is the need for critical assessment of the learners'

needs, the learning environment and learning goals to ensure the effective complementation of learning strategies or environments.

Debates on blended learning

Arguments for blended learning

It is axiomatic that the discourse on BL is inconclusive without recourse to the concept's merits and downsides. The widely reported incentive of BL is the flexibility with which students with competing needs and responsibilities can access learning materials, anywhere anytime, provided there is internet connectivity (Ramsey, Hawkins, Housner, Wiegand, & Bulger, 2009; Allen & Seaman, 2007). The concept of BL ideally supports the application of innovative pedagogical methods across different learning contexts and potentially affords the realisation of growing needs and expectations of learners with access to new information and communication technologies (ICT) services (Sangi, 2009). Developing diverse combinations of face-to-face contact and online instructional delivery is credited with fostering active independent learning and reducing class seat time (Garnham & Kaleta, 2002). Students self-regulate their learning processes by choosing when and how to access the learning material and educational support they need for the enhancement of their learning. They are better able to draw on an increasing diverse network of learning communities (peer-based information networks, community-based knowledge systems, personal, experiential knowledge, best practices from their instructors) in their process of critical inquiry and knowledge construction. As the Tooling University (2009) proposes, online training and instructor-led portions of BL enhance the development of student knowledge and comprehension of a subject, while hands-on training allows the students to apply that knowledge to applications on the shop floor.

By combining different forms of learning tools such as real-time virtual/collaboration software, self-paced web-based courses, electronic performance support systems (EPSS) embedded within the learning-task environment, BL practices provide project-based learning opportunities for active learning and interaction among

learners (Aytaç, 2009). Improved personal relationships between tutors and students, reduced training time, and the easy update of training materials are some of the compelling rationale for educators' use of BL models (Thorsteinsson & Page, 2007, Aytaç, 2009). The development of a networked community with a shared resource base is another acclaimed benefit of building BL designs. Smith (1992) suggests that computer mediated communication [of BL designs] renders three types of collective/ public goods that bring cohesion among virtual communities namely, *social system* (an immediate web of contacts with useful skills), *knowledge assets* (a personal, distributed brain trust with just-in-time answers to immediate questions), and *communion* (psychological support from people who share common joys and trials) (cited in Isenbarger, Kitchens, & Nyce, 2008). As such, BL models potentially enhance peer-based learning initiatives, knowledge production through networks and perceptibly foster safe learning environments for deeper forms of student engagement and interactivity.

Criticisms of BL

Blended learning is often blamed for a variety of reasons: the additional demands it imposes on teaching staff to design, implement collaborative learning tasks, continually assess and support students as they engage in online learning environments. It also demands dedicated staff to initiate, socialise and scaffold students in virtual spaces so that they sustain on-task behaviours. As Aytaç (2009) reiterates, it takes time for both the instructor and learner to adapt to this relatively new concept of delivering instruction. For example, some instructors often struggle to integrate some online applications (e.g., discussions) into the learning environment notwithstanding the amount and quality of instructor-student interaction, which are significant factors in students' overall satisfaction with their courses (Cook, Owston & Garrison, 2004).

As tertiary institutions adopt BL environments, additional training for students and academics is necessary to bridge not only the articulation gap between them but also to re-skill them as they

enter new terrains in information management and technology use. Advances in technology pressure educators to adopt new roles and pose challenges that require on-going training and support (Lee & Hirumi, 2004). These challenges are further compounded by other technological difficulties in web-based courses, like power outages, Internet connection difficulties, and course web page glitches that can cause frustration, interrupt student progress and ultimately cause attrition (Ramsey, Hawkins, Housner, Wiegand, & Bulger, 2009). Having explored the academic value and criticism of BL, it is prudent at this juncture to provide a brief overview of its implementation in the South African university context. The following section, therefore, renders a snapshot of some of the established LMSs adopted in South African higher educational institutions (SA HEIs) and their perceived advantages.

Learning Management Systems: An Overview

The South African discourse on BL is often made with special reference to LMSs. This is because LMSs constitute the main technology infrastructure for teaching and learning at university. These have branded as information portals, virtual learning environments (VLEs), content management systems (CMSs) and online learning (e-learning) environments. There are variations of LMSs in South Africa and these range from proprietary software (Blackboard) to open source versions of software like Moodle and Sakai. Some South African universities have branded their version of software with local names for easy recognition with their academic clientele (students, academics, university administrators). “Vula” (meaning to open) is the University of Cape Town (UCT) brand of open source LMS, Sakai, the Central University of Technology’s version of Blackboard is called “E-Thutho,” while the University of South Africa (UNISA) has branded its online portal “myUnisa.” The LMS, ‘myUnisa’, which is a Sakai based platform is used to offer tuition and administrative functions to develop and enhance academic interaction and improve communication between UNISA and its students (Venter, van Rensburg & Davis, 2012).

As courseware, LMSs provide a comprehensive suite of collaborative tools, applications and interfaces allowing for content transmission, collaboration, general course management and online assessments. From a technological affordances perspective, Ivala (2011, p. 156) provides a comprehensive account of LMSs' functions: They enhance asynchronous and synchronous communication and collaboration; content development and delivery (learning resources, development of learning object repositories and links to internet resources); formative and summative assessment (submission of assignments, multiple choice testing, collaborative work and feedback, peer review); and class and user management (registering, enrolling, displaying timetables, managing student activities and electronic office hours).

From a pragmatic perspective, LMSs are hailed for their potential to address the perceived higher educational challenges of (i) delays in the delivery of course outlines and study materials, and untimely access to learning resources, (ii) lack of regular and effective communication between instructors and students, (iii) lack of immediate feedback from instructors to students about their learning, and (iv) outdated learning resources and (v) feelings of isolation (Nihuka & Voogt, 2012). Drawing on their South African university experience, Nel & Wilkinson (2008, p. 148) project a context-bound perspective on LMS functions: They have potential to address "the diverse student population from different socio-economic backgrounds; large classes; inadequate preparation of students for higher education; the continuation of some of the inequalities of the past; and some students' lack of technological skills." Similarly, Davis & Venter's (2010) study reports that South African university students generally attach high value to keeping in contact with lecturers and other students via electronic media such as online forums, text messages via mobile phones and emails. Therefore, LMSs potentially heighten educator-student academic engagement through sustained, communication and on-demand feedback between them. In the following section, the current study reviews the studies on the practical implementation of selected LMSs at specific

universities to highlight their perceived value and illuminate understanding of their pitfalls and shortcomings.

Learning Management Systems at South Africa HEIs: Our heroes or villains

A recent study on 262 participants (educators, directors of teaching and learning centres, senior academics) at 22 public HEIs in South Africa examined their use of emerging technologies. Ng'ambi, Gachago, Ivala, Bozalek & Watters (2012) report on the prevalence of the learning management systems / course management systems as the mainstream technology supporting most educators' innovative teaching and learning practice. Their findings also suggest that despite the affordances of emerging technologies, there were few instances of transformative uses of emerging technologies at South African HEIs.

Cox (2008) investigated the uptake of Vula, UCT's version of the Sakai-based LMS among ten educators in the Humanities faculty. Her findings suggest that eighteen months after the initial training workshops on the use of Vula tools and its introduction at the university, the majority of the lecturers (nine) were using the site primarily as an online learning environment for hosting courses and modules. The site was appropriated for supporting basic course administration (course outlines and calendar), meeting basic communication (announcements) and resources requirements (uploading lecture notes and readings onto a resource directory). Interpreting her study findings through Rogers' (1995) Innovation Diffusion theoretical lens, Cox (2008) concludes that the majority of these educators fell into early and late majority classification, judging from the time they took to adopt the LMS for educational purposes. These educators' perceivably traditional uses of technology fall within Hughes' (2005) *replacement* and *amplification* categories as they do not constitute transformative applications of educational technology. For Hughes (2005), replacement model underlies the performance/realisation of pedagogical goals with technology that could otherwise be met using a different mode (for example, paper-

based mode) or by other means. Amplification emphasises improving the efficiency and effectiveness of delivery without profound adjustments /alterations to the nature of the task (Pea, 1985). In Cox's (2008) study, the few innovators and early adopters were using Vula to promote interactive teaching through the use of conversational technologies like discussions forums, as well as assignment submission tools and quizzes.

Stewart's (2012) study highlights the repurposing of an LMS, Blackboard, in the Faculty of Arts and Design at the Durban University of Technology. The online faculty portfolio (usually referred to as "EXCO Online") was employed to provide a single secure online space to connect heads of department whose academic programmes were dispersed geographically over six different sites of delivery. As Stewart (2012) points out, the repurposing of the LMS was intended to advocate for e-learning through department heads' (HoDs) involvement in an LMS-based management tool, to address the isolation of technology innovators and adoption of innovative e-learning approaches. He postulates that EXCO evolved into a useful technological tool for expediting academic management decision-making across the faculty's six delivery sites through access to strategic planning documents and prompt decision making. The platform facilitated improved management responsiveness while obviating the need for time-consuming ad hoc face-to-face meetings. The online learning environment however, put into the limelight some of the issues that were raised in face to face meetings like some members' neglect of voting at meetings and the impression of superficial "rubber-stamping" from members even on those issues that required more in-depth engagement.

Van der Merwe & Van Heerden (2012) explored the implementation of a Webinar (WEB-based semINAR) synchronous conferencing tool by 52 disadvantaged students in a low-bandwidth Open Distance Learning (ODL) environment, the University of South Africa (Unisa). The use of Webinar involved the hosting of academic presentations on the web server, which is then accessed by an audience in multiple formats. The agenda of the study was to implement and evaluate the innovative web-based tools that had not

been rolled out in the institution's Sakai based VLE, myUnisa to understand their capacity to support collaborative discussions. Their results demonstrated that the majority (43=81%) of the previously disadvantaged students (PDS) accessed Webinars via their laptops and used their mobile phones (29=69%) to connect to the Internet. Van der Merwe & Van Heerden's (2012) findings suggest that PDS experienced more technical problems with Webinars especially the lack of sound than their previously advantaged (PA) counterparts. Similarly, the PDS weighted all the academic advantages of Webinars (access to lectures, feedback from lecturers, appointments with lecturers, and open discussion with peers) lower than their PA counterparts. These lower ranking were attributed to connectivity / technical problems and the higher cost of access they experienced compared to their counterparts. The study reports that while both groups rated the collaborative activities on Webinar highly, PDS were more discursive oriented than their counterparts because of the perceived swiftness of feedback from peers as compared to formal discussion options (like consulting with lectures, lectures, and lecturer feedback).

Ivala's (2011) study draws on interviews with university educators who used the LMS, Blackboard, technology non-users (also educators) and student focus group discussions to understand the extent of integration of this technology into teaching and learning. The educational benefits of Blackboard reported by the educators (users) included: assistance in the identification of at-risk students, smooth integration of in-class and online learning activities, systematic planning of instruction and a heightened interest in academic research that promoted the generation of current, topical information for students. Similarly, students interviewed conceived Blackboard to impact meaningful learning through improved lecturer-student contact, provision of supplementary content not normally dispensed with in lectures, transformation of their conduct of research and referencing. However, the appropriation of Blackboard was also fraught with complexities which ranged from instability in the information technology infrastructure, paucity of sustained technical support subsequent to initial training, limited

incentives and motivation and limited awareness of the pedagogical benefits of Blackboard. All these confounding factors converged to bring about sub-optimal utilisation of the LMS by educators.

Dwayi's (2011) study documents the implementation of an LMS called WiseUp, Walter Sisulu University's (WSU) brand of Blackboard. He observes that this roll out constituted the strategic implementation of grand change management perspective to integrate information, communication and technologies in teaching and learning into the institutional mandates. Dwayi (2011) highlights that WiseUp was implemented against the backdrop of multiple technological, human resource and pedagogical constraints of low throughput, limited student technological skills, educators' antiquated teaching methodologies, lack of competency based education and paucity of a centralised online learning environment. The LMS, which is an offshoot of the Netherlands-funded (Nuffic) Project (WSU, 2007) is anchored in the development of an e-learning strategy and innovative curricula. The study reports on the phenomenal uptake of multiple tools that Blackboard provides like gradecentre, the early warning system and plagiarism tools. Academics emphasised the potential of WiseUp to impact student ease of access to educational resources, provision of immediate feedback, heightened interaction with students and online testing of students from multiple question banks. The findings, however, highlight other contending challenges around developing the necessary technical capacity and transformative pedagogy to ensure meaningful delivery of learning goals including the complexity of using WiseUp to support student access, retention and ultimately academic success.

Mayisela (2011) concurs with Dwayi (2011) that WiseUp was created to offer a web supplemented environment through which educational materials could be uploaded to support the learning of students and address the challenges that WSU is facing as a rural-based university. These challenges include the poor study skills of learners, high failure rates and underprivileged students' difficulties in coping with lecture delivery. To cope with these challenges academics have been trained on the use of this learning environment, the uploading of learning materials and students have been required to

register onto this environment to access and interact with learning resources. Some of the functionalities of WiSeUp reported include: serving as an online repository for learning material, administration of online tests, and submission of student assignments virtually. A sporadic uptake of WiSeUp by both academics and students was reported. Increasingly, more educators had uploaded learning materials on this LMS and the study hailed the university executive management for the substantial support it rendered during the adoption of this technology.

Learning Management Systems-A sympathetic critique

Given South Africa's complex history of racial and economic inequalities, academic disadvantage, and diverse languages, it is over optimistic to pin hopes of deep academic engagement solely on institutionally-sanctioned technologies. Rambe (2009) aptly observes that traditional, transmission technologies like LMS may conceal academic prejudice and are insufficient for tackling subtle forms of psychological powerlessness and social domination that previously disadvantaged students (PDS) encounter as they interact with academics and more capable peers from privileged academic backgrounds. LMSs tend to impose a sense to homogeneity among students through the provision of standardised decontextualized content, downplay of student talk-back processes on their emotions and self-generation of content. As such, conversational technologies that empower these students to appropriate their own voices and self-regulate their engagement processes may be necessary. More so, LMSs fail to sufficiently accommodate those often marginalised by institutionally-dependent provision of content and learning networks like the physically challenged that are compelled to frequently commute to campus to access these academic resources.

The de facto appropriation of foreign languages (English and Afrikaans) as instructional media for academic discourse and communicating academic material via LMS is a further communication barrier for second and third-English language speakers at South African universities. The lack of an authentic language environment and imbalances in classroom participation are

perceived obstacles to non-native English-speakers' acquisition of English language (Yang, Gamble & Tang, 2012) that cannot be addressed by traditional instruction via LMS. Other pitfalls of LMSs are that instructors cannot access certain features such as creating a course, enrolling students and setting up student groups as these functions are usually open to instructors or administrators only (Wang, Woo, Quek, Yang & Liu, 2012). Yet, mindful of the fact that tutors are often postgraduates who can more easily relate to student language problems than senior academics due the limited social distance between them and students, it is counterproductive to exclude them from an inclusive technology of students' choice. Traditional LMSs do not seem to support learning beyond the institution, downplay academic networking and perceptibly suppress creativity often afforded by the development and integration of third party applications into these portals. As such, Bosch (2009) reports that although UCT's LMS (Vula) supports synchronous and asynchronous online discussions in chat-rooms and discussion boards respectively, students seldom use these features. Students are more inclined to use social technologies like Facebook, blogs or Twitter for engagement and online collaboration than the institutional LMS. The aforementioned constraints of LMS justifies the search for complementary and even alternative technology applications and tools to improve LMSs academic value in the face of the migration of students to mobile and social networks.

In defence of mobile learning in South Africa

Given the relatively exorbitant cost of access to the Internet via desktop computers and context-dependent access to university computers, mobile devices constitute ideal complementary gadgets for student connection to the Internet. Kreutzer's (2009) study investigated 441 grade 11 South African learners' uptake of mobile phones as communication and social engagement tools in selected low-income schools in Cape Town. He reported these previously disadvantaged learners' multiple uses of the Web, mobile internet applications, instant messaging, and their sharing of digital media via

their phones. These productive uses of mobile gadgets provide a strong case for educators' appropriation of mobile devices for academic purposes.

Botha & Butgereit (2012) explored the potential of Dr Maths, an online mathematics tutoring service, to support South African learners in mathematical problem solving. This service, which involves university tutors' provision of support and scaffolds to students in mathematics, is accessed via MXit, a mobile instant messaging service widely adopted by South African youth. Their study illustrates the potential of Dr Maths to render indirect scaffolding like self-correcting tasks, corrective feedback from experienced tutors, and environmental enablers like sharing of artefacts, peer collaboration, free play and emotive approachability. Makoe's (2010) pilot study on South African distant learners' use of mobile instant messaging application, MXit, postulates its potential to foster collaborative conversations, enhance the co-generation of knowledge and boost learner affiliation to an exclusive community. Overall, the use of social media for learning at South African universities is a consequence of particular educators' serendipitous innovation rather than institutionally sanctioned design and adoption.

Mobile social networking: viable complement of LMS

Given the impeccable convergence of mobile devices and social networking and a concomitant huge presence of college learners on these networks, there is scope for the complementation of mobile social networking with traditional LMS. Souza (2011) reports that as at November 24, 2011, the majority of the 11 million Mxit users in South Africa accessed this social networking service via their mobile phones. Similarly, 4.5 million of the estimated 5.3 million Facebook users on the South African Facebook network accessed it via their mobile devices (Strategyworx, 2012). Rambe's (2012) study on South African university students' use of mobile social media suggest that although many of these intelligent gadgets come preloaded with social media applications, these functions have not been sufficiently exploited for academic purposes. Some of the emerging academic

application of Facebook mobile reported in his study are the formation of academic discursive communities like tutorial groups, recruitment of potential participants for students' postgraduate research, sharing of academic links and learning resources. Educators' limited exploitation of these functions is attributed to a lack of social media literacy and students' disillusionment about Facebook's integration of academic networking and social interaction. Some educators have limited awareness of the affordances of Facebook groups and networked engagement. The argument, therefore, is that educators' integration of mobile social networks into mainstream technologies like LMSs potentially leverages the academic value of these networks.

Kabanda & Rambe (2011) articulate the adoption of Facebook by the Information System Department at the University of Cape Town to support the academically at-risk students. Students had three options to interact with a designated online administrator on Facebook: through private consultations (through the Facebook message feature), publicly through Facebook walls and discussion forum pages. Students had multiple access to Facebook consultations—desktop computers and their mobile devices (cell phones, personal digital assistants, smart phones). Given the institutional restrictions of Facebook use in main libraries and computer labs due to bandwidth problems, mobile phones served as students' most preferred channel of consulting with peers and academics due to their convenience and easy accessibility. They also have a sense of “privacy” for with their lecturer compared to classroom conduct. However a general apathy was reported because online student consultations were need based and no lucrative marks were offered for intensive engagement (except for the 2% mark that was added onto student term mark). . The limitation of Facebook communications, however, laid in the educators' requirement for student consultation via the walls to ensure more open communication for the benefit of the entire class. This ironically exposed the Second-English language learners linguistic challenges and came played out as prejudicial to non-English speakers leading to some apathy on Facebook among these students.

Rambe & Bere's (2012) investigated 95 Information Technology students at the Central University of Technology's (CUT) use of the instant messaging service, WhatsApp, for group collaboration in complex problem solving. Their findings suggest that WhatsApp discussions leveraged student on-task behaviour, recruited student concentration on specific academic tasks and fostered participation in collective problem solving. Students, however, complained about the possibility of wide-scale rollout of WhatsApp in other courses due to the high cognitive load of WhatsApp tasks—the pressure to read a deluge of messages from friends coupled with the requirements for close reading before critical commenting. Notwithstanding the highlighted shortcomings, the incentives of mobile social networking illustrate the potential of mobile social media to complement mainstream technologies.

Challenges of using of (mobile) social networking

The academic use of social media (including mobile social networks) is imbued with several challenges ranging from privacy violations (Cain, 2008; Regan & Steeves, 2010; Proctor & Vu, 2007), student temptations of academic dishonesty (Seitz, Orsini & Gringle, 2008; Szabo & Underwood, 2004), their perceived disruptive nature (Selywn, 2007; Rambe, 2011), their bandwidth intensive nature like Facebook and YouTube (Bosch, 2009) and the need for the reconfiguration of social media literacy into academically productive literacies. Privacy issues revolve around student differential awareness of their lack of privacy on public sites, access to their web pages by unsanctioned third parties, harvesting of self-generated content and limited knowledge about the implications of information posted on social networking sites for their career progression and personal security. The provision of pedagogical support and guidance would result in more productive use of these sites for academia.

With regard to academic dishonesty, Seitz, Orsini & Gringle (2008) report on how YouTube-sanctioned academic cheating unfolds through the posting of instructional cheating videos online and the popularity of cheating videos judging from the positive affirmations they received from viewers. The use of plagiarism

control software like turnitin and student warning against plagiarism through posting some academic signage discouraging these activities could help address this unethical academic practice.

With regard social media literacy, Rambe (2010) argues that social media-enhanced learning environments often put additional cognitive demands on learners to generate, share, and meaningfully engage with Web content. The challenge, therefore, is ensuring that student social media literacy skills are productively employed and transformed into academic engagement skills. As Dabbagh and Kitsantas (2005) suggest, in Web-based learning environments, the physical absence of the instructor and the increased responsibility demanded of learners to effectively engage with learning tasks may present difficulties for learners, particularly those with low self-regulatory skills.

Arguments for the integration of LMSs into mobile environments

Due to the aforementioned limitations of the LMSs (insulation from outside networks, dependence on institutional networks, strong lecturer regulation and limited student self-generated content) some South African universities are exploring the mobile deployment of institutional LMSs through developing mobile applications run on LMSs. Van Rooyen (2012) documents how the University of Stellenbosch has developed its own in-house mobile clicker system, using students' cell phones as clicker devices, incorporated within their learning management system. She reports that clickers support the provision of instant feedback, interaction and understanding among students, especially for large classes. Stellenbosch University has also successfully used a smooth mobile client on Moodle to support distance education students. Similarly, literature suggest that there are several mobile applications that are currently functioning outside the LMS ecosystems and teachers should innovatively exploit these applications not supported by their institution to extend students' reach outside the campus (Forment, Guerrero & Poch, 2010). The value of mobile learning lies in context free access to learning resources, and its ability to meet the needs of those students

normally excluded by contact based access to LMSs (off campus students, physically challenged students, student who work full time and learn part time). More so, learning communities provided in mobile learning environments like WhatsApp mobile applications including provisions for social learning through collaboratively generated resources, make mobile applications ideal complements for LMSs. Since mobile applications are some of the students' preferred choice of technologies, integrating these with social networked technologies would broadly extend student learning communities.

The fact that Facebook [enabled phones] provide third party functionality and interactive pages that enable Web-searching, blogging, instant messaging, e-mailing and real time functionality (Leitch & Warren, 2011) implies that there is much academic value to be derived from the integration of LMSs with mobile social networking. Moreover, literature suggests that social networking technologies enable the use of participatory pedagogies to address the problems that have traditionally plagued distance education: creating a sense of presence, community-building, and learner participation in interactive discussions (Veletsianos & Navarrete, 2012). As such, social media serves a perfect complement of LMSs which have naturally under-delivered on these main issues. Having argued for the integration of LMSs with mobile social networking, the next section, highlights some of the key principles that could guide the development of these blended mobile social media environments.

Principles for the design of blended mobile social media environments (MSMEs)

Having motivated the value of mobile social media environments (MSMEs) for pedagogy, it is imperative to provide structural, systemic /environmental, technical and functional issues that should inform their design. The concept MSME is technically constituted by a seamless conceptual integration of LMS and mobile social media functionalities. The following sections render a detailed overview of the key principles to consider in the conceptual design of this unique, special purpose environment.

Broad structural issues

These relate to broad conceptual issues that cannot be limited or restricted to a particular domain but rather cut across disciplines and domains. Concepts, constructs and theories are typical examples. Theories are discussed in the section below.

Theory driven

Success in blending learning environments (for example mobile social media with traditional LMS) requires a theory-based instructional model in addition to high quality faculty development, course development assistance, learner support and on-going formative and summative feedback (Dziuban, Hartman & Moskal, 2004). The effectiveness of the design process necessitates academic consciousness of the appropriate theories-in-use and the different components of each theory including how they are brought to bear on the overall design. For some scholars, effective design is spelt out as a confluence of new pedagogies, new technologies and new theories of learning that are enabling new teaching and learning models (DeZure, 2000; Buckley, 2002). Therefore, the way any general learning theory is adopted and applied, the rationale for the inclusion of specific learning objects and activities, and the learning communities involved constitute critical considerations in successful use of a theory in learning design.

Systemic environment issues

These issues relate to the immediate pedagogical environment in which different technologies, community of interactants and networked engagements intersect to provide an enabling or constraining milieu for the “connectivist” (Siemens, 2005) production of knowledge. A balanced systemic environment provides the context for the synergy of applications, tools, networks, enhances access to different players and nurtures multiple forms of engagement.

Synergy of systems, platforms, applications and tools

Synergy of learning systems, academic applications and tools is critical to developing a responsive, dependable and ambient learning environment in support of resourceful engagement. Effective designs require the merging of few, customizable resources, learning designs that build on knowledge about learning and instruction based on research and trials in classrooms and innovations that lead to seamless learning across different spaces (Borgman et al, 2008). Developing an ideal mix of learning tools depends on the learning goals and expectations of the principals of the project, complementation of available technologies, the skills and competence base of the student clientele served and the life span of the project. As Reay (2001) suggests, the successful implementation of BL requires the understanding of the strengths of different mediums, how learners engage in this type of learning process, how they use information from each different medium and how they handle online (and other distance learning modalities) and traditional teaching methods in a combined form.

Accessibility

Students might be geographically dispersed and hence an appropriate combination of face-to-face contact and online interaction presents diverse learning opportunities for those constrained by time, money and effort to be on campus regularly. Reducing the time allocated to face-to-face sessions might reduce the limitations of time and place for students, thus providing students with flexibility with regard to time, place, and access to course content (Korkmaz & Karakus, 2009). Intelligible interface design, academically meaningful/authentic content coupled with sustained networked access to learning resources via reliable, stable Internet networks contribute to the reduction in the cognitive load of learners.

Engagement, affiliation and support

BL models should clearly articulate the different levels of interactions required for student success in the course. These include student-content, student-lecturer, student-student, small group

interactions, whole class discussions and interactions with the extended learning community. Students must also know and fully exploit the different affiliations afforded by the learning environment and expected of them by faculty. Community-building tools that allow subscription to, setting up of, participation in discussion groups, information feeds, or shared activities of interest to the individual are equally critical to responsive learning design (Daigle & Cuocco, 2002).

Effective designs should clearly articulate the academic, technical, psycho-social and even emotional support provided by the system as well as the contacts available to render such assistance and support. As Bogle et al. (2009) reiterate, such support includes clear explanations of basic research, writing, and technology expectations for the course. The personnel or software available for answering questions, the time taken to receive feedback and diverse feedback offered should be disclosed to students and members of the academic community.

Technical issues

Connectivity issues and interoperability

Arguing from a mobile learning perspective, Koole (2009) constructs connectivity from two fronts of technical capability which are device networking and system connectivity. The former relates to the various connectivity standards that allow users to connect to other users, systems, and information. These include personal area networks (PANs), wide area networks (WANs), wireless local area networks (WLAN), synchronization software, wireless fidelity (WiFi) and cellular connectivity (Koole, 2009, p. 35). For Koole (2009) system connectivity involves [the linking of the devices to the] Internet and document transfer protocols, allowing users to exchange documents and information within and across systems. Interoperability entails the technical standardisation of technological devices or applications which enables them to function across different devices, platforms and networks. It is an instantiation of technological convergence, which involves the seamless integration

of technologies to allow and enhance the porting of digital information across diverse platforms or technologies (Rambe, 2012). The technologies in use should therefore function in and across different BL contexts to ensure easy accessibility and sustainable use.

Scalability

The scalability of networks, computer-based systems and learning environments relates to their extent of flexibility to accommodate dynamic changes in user demand and use. In an LMS, scalability relates to the capacity of the system to adapt and accommodate increases in demand from users in relation to uploading and downloading of, transmission of content (messages, pictures, graphics, and animations), hosting of information, presence and interaction of multiple users on the same network with limited/ no strain on the system.

Functionality and usability issues

Easy-to-use technology

Learning designs should focus on technologies that are readily accessible to students and compatible with current delivery standards, ensure that clear instructions on accessing resources at a distance are provided and that the course design takes full advantage of available technologies (Bogle, Cook, Day & Swan, 2009). Accessibility also entails the websites' conformity to standards and institutional policies regarding accessibility, screen readability, course pages and materials that provide equivalent auditory and visual content, and links that are self-descriptive (Ibid).

Uses

A technology or learning platform must provide diverse functionality ranging from access to learning content, productive use of tools (conversational, reflective, assessment tools) and sustained interactions between various learning communities. Learning designs should harness tools and applications that fulfil the purpose of their inclusion in the design. This constitutes a structural and determinist

approach to technology use where human social interactions and goals of engagement are shaped and influenced by technology. The flip side is the agency approach constructed around the notion of a personal learning environment- one in which users strategically appropriate and systematic use a diverse mix of different applications to construct their personal environment for productive learning.

Variety

BL designs must offer diverse channels or modes for the delivery of learning content. These modes range from auditory (for example, podcasts), video (vodcasts, screencasts), textual (wiki, blogs, folksonomies) to visual (pictures, images) representations. Diverse formats of textual (re)presentation allow students with different learning styles and needs to cogitate and meaningfully appropriate learning content. The diverse media should afford different kinds of learning and allow students to draw on their prior knowledge and experiences in their meaningful construction of knowledge.

Prompt feedback

While asynchronous systems support deep cycles of reflection, prompt feedback loops are reported to enhance student motivation to learn. Virtual student support mechanisms such as online learner aids and help-desk service provide students with on-demand help needed (Dziuban, Hartman & Moskal, 2004) while online tutorial system examples (Petrides, Karaglanı and Nguyen, 2005) enhance student practice in knowledge construction.

Academic authority Domain

Users' interaction with content in a BL environment can be interpreted as a process of knowledge construction, one that initiates and establishes them as academic authorities in their respective fields. Salmon's (2000) Five Step model of online facilitation provides a useful framework for understanding learning and provision of support in an online learning environment-itself the journey for novices' transformation into seasoned scholars. This progressive step model involves *access and motivation, online socialisation, information*

exchange, knowledge construction and development. It suggests that students progressively gain familiarisation, control and responsibility for their knowledge construction and cognitive growth. Learning in blended mobile social media environments provides a prototype of Salmon's (2000) theoretical construction notwithstanding that constructivist learning including skills development can be spontaneous and not necessarily progressive as suggested by her model. Rather than a stepped model as her conceptualisation suggests, this work proposes bidirectional layers of complex, mutually transactive learning activities and processes emerging from a dynamic, systemic environment. These activities and processes are elaborated in the sections below (see Figure 2).

Ground rules layer

This layer involves educators' establishment of a social presence in the environment, the invitation of students to sign onto the blended environment, acknowledgement of their presence by rendering announcements to students and student familiarization with the learning environment. Academics also take advantage of their online presence to establish the ground rules of online communication. This netiquette supports respectable, sincere and democratic communication among students from diverse disciplinary, linguistic and communicative backgrounds. Realistic expectations and achievable goals of learning and interaction are also established through open negotiation and dialogue between interactants, with educators' support.

Transactive layer

The volatile layer involves lightweight communication and interactions that are academic oriented but might not necessarily be rooted in academic theory and constructs taught in class. Recruitment of informal interactions, socialisation, and identification of common research interests constitute the informal canvassing of networked communication. Through the transactive layer, informal social networks that bridge the social distance between academics and students, students and peers are enunciated and consolidated. The

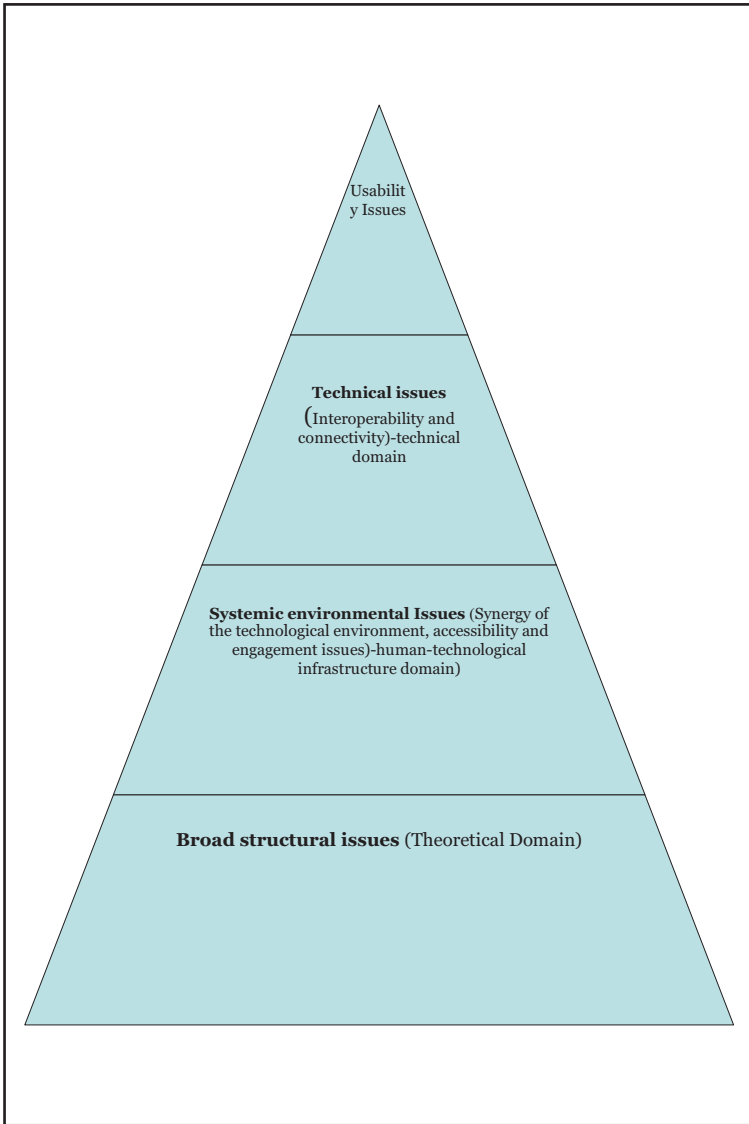


Figure 1: Summary of the technology domain

constitutive meaning and significance of the blended mobile social media environment to all key players' engagement and other unintended possibilities arising from the appropriation of this system are explored.

Generative layer

Since interactions in a mobile social media environment are informed by student-generated social objects and applications, the generative layer necessitates the further metamorphosis of interactions that are content based, including student appropriation and domestication of various applications and social objects of educational value. The generative layer summarises user generation of content, the building of transcending networks and student ownership of the online learning spaces. It is a prototype of the build-operate and transfer model where students increasingly assume ownership and responsibility for decisions about content, transactive exchanges to sustain with various individuals and communities and how constructionist and constructivist learning should proceed in and across multiple contexts.

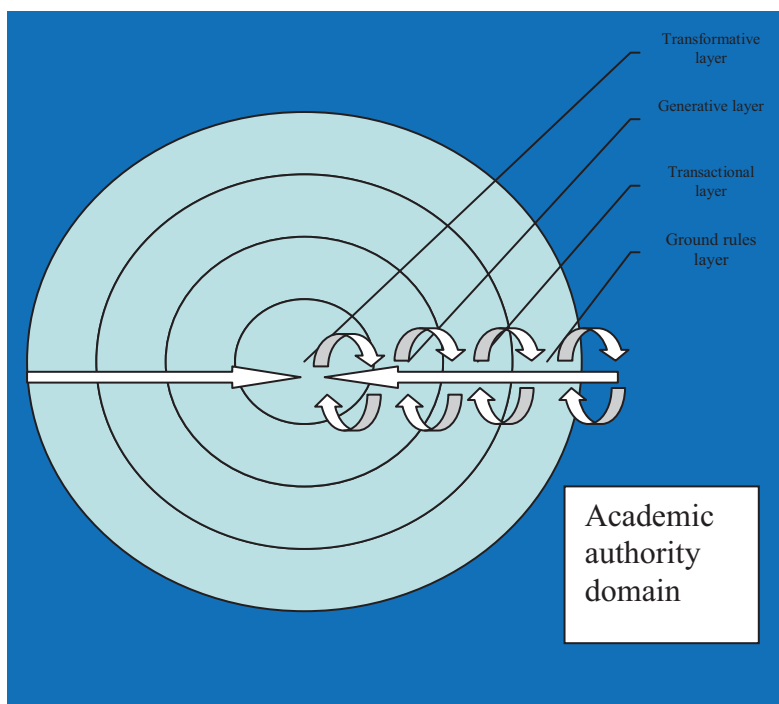


Figure 2: Academic authority domain

Transformative layer

Transformation is the process of deep meaning making enabled by the productive appropriation of applications and technological tools. It involves shifts in mind frames, ways of thinking about knowledge (epistemologies) and how it is produced and disseminated. The generation of new social objects and applications is a necessary but insufficient condition for the production of transformative practices because transformation should undergird the use of technologies and applications in novel, unintended and unanticipated ways.

Synopsis of the layers

The dynamic interactions and mutuality of transactions across the different layers allow for the cross pollination of social practices and exchange of social objects between and across layers. While the outward layers serve as preparatory/background materials for the smooth progression to the next layers of higher academic authority and engagement, the layers should not be conceived as serial and one-directional. Rather learners can move between and across different layers once they are socialised into the mobile social media environment depending on their intellectual curiosity, experience in meaningful online engagement and on-task behaviour.

For mobile mediated interactions, the highest vortex is the attainment of the transformative layer where new ways of thinking, new knowledge and new perspectives influence student academic conduct. More importantly, if students are not adequately supported academically or fail to gather the necessary momentum to progress to this layer, they may stagnate in one layer or regress into the preceding layer (See the backward arrows in Figure 2).

The academic authority domain involves the use of mobile and social media applications drawing on practices students have already established in these applications and their re-engineering in the new mobile learning environment. In mobile networking some of the common practices include short hand messaging, short message services (SMSs), use of smileys, and emoticons. The use of informal communication genres like short hand messages, duplicatives and

emoticons might need to be transformed into more formal communication genres and repertoires for it to be academically useful. With regards to the academic use social media like Facebook, new lifelong learning practices and social media literacy need to be incorporated into students' communication repertoires to make learning safer and productive. Inducting students into social media literacy includes practices such as setting privacy settings, managing notifications, information load and sifting a deluge of postings from ones' community.

Engagement Domain

The engagement domain describes the different forms of cognitive and social relationships that emerge from learning communities' (educators, tutors, students) interaction with learning environments, technology tools and content. Understanding these relationships is critical to the design of powerful and meaningful mobile media environments. Bennett et al (2007) observe that as designing effective online learning experiences remains a significant challenge for the university, the practical, relevant and flexible supports and tools that university teachers need as they design online learning need to be explored. As such, the engagement domain strives to use productive learning communities' academic relationships as props for illuminating understanding of the different technological tools and environments that would support meaningful learning. These forms of engagement are *self*-, *intra-cluster*, *inter-cluster* and *vertical engagements*.

Self-engagement constitutes self-reflexivity in which technology users update, alter, shift and transform their mental schemas through deep, recursive inquiry. *Intra-cluster engagement* relates to engagements that unfold between peers in small individual groups. For example, learning environments like WhatsApp, a popular instant messaging service run on Web-enabled phones popular among South African youth, allows the formation of online learning groups of up to 11 members per group and their engagement with content within that cluster /group. *Inter-cluster engagement* focuses on the interactions and knowledge exchanges that happen across different learning clusters

while *vertical engagement* emphasises the hierarchical knowledge exchanges that unfold between academic and students based on pedagogical content knowledge (see Figure 3).

It is peremptory to emphasise that self, horizontal (intra and inter-cluster) and vertical engagements between students and academics are deeply interconnected and hence cannot be conceived in isolation. For example, self-engagements can be mutually co-constituted with intra-cluster engagements through self-reflexivity by individual students who concurrently engage with peers and academic resources within their respective clusters. I will coin this form of reflexivity as *self-intra-cluster reflexivity*, which plays out as mutually-constitutive, recursive, bidirectional interactions between individual mental frames and collective schema within a designated cluster. This cogitative process can also be called *self-intra-cluster engagement*. Self-reflexivity can also co-exist with psychological processes emerging between clusters of student interactions (between and cross student clusters). This form of reflexivity manifests in student transactive processes involving reflection with their individual selves and with collaborative mental processes (ideas, perspectives, mind sets and views) generated by peers between and across multiple student clusters. I call this form of reflexivity *self-inter-cluster engagement* (See figure 3).

Yet critical engagements also emerge between academic authorities, individual and collective clusters of engagements allowing for discursive transactions and mutual exchange of knowledge, artefacts and social objects -vertically at various levels. The social constructivist knowledge building process between the academics and individual clusters of students is called *vertical-intra-cluster engagement*. This involves the recursive, concurrent interactions and reflexive processes between individual students within a given cluster and their academic mentor. The transactive exchange of knowledge and thinking processes between the individual academic and multiple clusters is regarded as *vertical-inter-cluster engagement*. An even more complex form of reflexivity involves the dual, reciprocal and recursive intersection of individual, intra-cluster, inter-cluster critical

engagements with vertical forms of reflexivity. I will call this *psycho-social engagement* or simply *inter-mental engagement* (See figure 3).

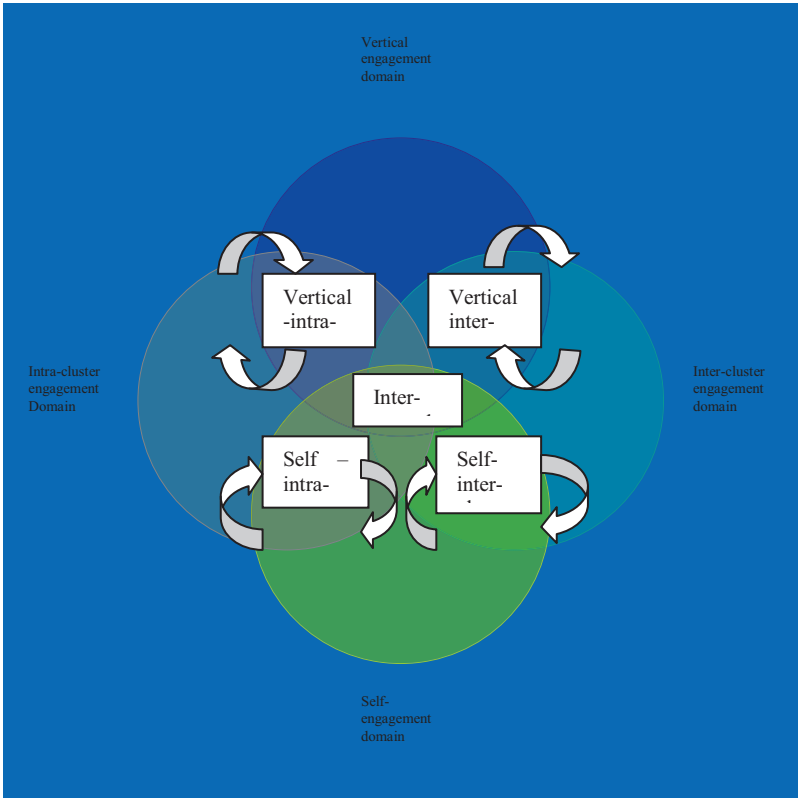


Figure 3: The engagement domain

Towards a blended mobile social media environment

The self-engagement domain basically mirrors the personalised learning environment bestowed by a traditional LMS, which enhances individualised access to learning resources, social objects and learning activities. Although some collaborative technologies like discussion forums and chats can be seamlessly integrated into traditional LMS to support intra-cluster engagements, students' sub-optimal utilisation of these conversational technologies inadvertently renders this space (a LMS) a de-facto self-engagement space. The intra-cluster

engagement domain captivates learning in mobile environments like WhatsApp where reflexivity unfolds through small clusters of up to 11 students per cluster but the platform does not necessarily support inter-cluster engagements. The social media environment like a Facebook group forum approximates inter-cluster engagements as individual tutorial groups can mutually engage with the whole class through discursive debates and open democratic inquiry via Facebook public wall and group forums. When these three networked interactions and reflexivity are seamlessly integrated, they constitute a blended mobile social media environment that allows for personal, small group, group and vertical forms of engagement to generate a vibrant, systematic learning community (see Figure 4).

Having explored the three domains – the *technological*, *academic authority* and *engagement* domains, it is critical to demonstrate how these domains can be interactively constituted and diagrammatically represented to form a blended mobile social media model. It is important to emphasise that the relations between these domains are non-linear and non-progressive, but rather are dynamic, dialectical, often eclectic and highly interwoven. For example, different levels of engagement are dynamically connected and related to different systemic layers within the technological domain-some which are rudimentary and inevitable, and others which are rendered (or restricted) in varying amounts and intensity. For instance, while technological networks are necessary for the transactional and generative layers to function properly, the network operations and their intensity are also functions of the different academic activities, social repertoires and practices, which shape the realisation of the latter. Figure 4 illustrates the merger of the three domains.

The technological environment, which is represented by the triangle, can be conceptual or physical. It includes the social media environments, mobile learning environments, learning management systems, internet networks (personal and institutional) and other appropriate technological structures. The highest level of the authority domain (transformative layer) is attained when an ideal technological architecture exists- one that allows for the appropriate synergy between networks, sound combinations of reflective and

collaborative technologies, adequate infrastructural support for personal and collective intellectual growth and transformative learning. The technology networks and architecture should also ideally support multiple and recursive forms of personal, inter-cluster, intra-cluster and vertical engagement through the provision of technology tools, applications, networks, academic resources and multiple opportunities for collaborative production of knowledge. The technology should also enhance different forms of institution-based and networked learning within and across different learning spaces. Mobile learning, social networked learning and mainstream learning via an institutionally provided LMS should be understood within the framework of the academic authority and engagements domains.

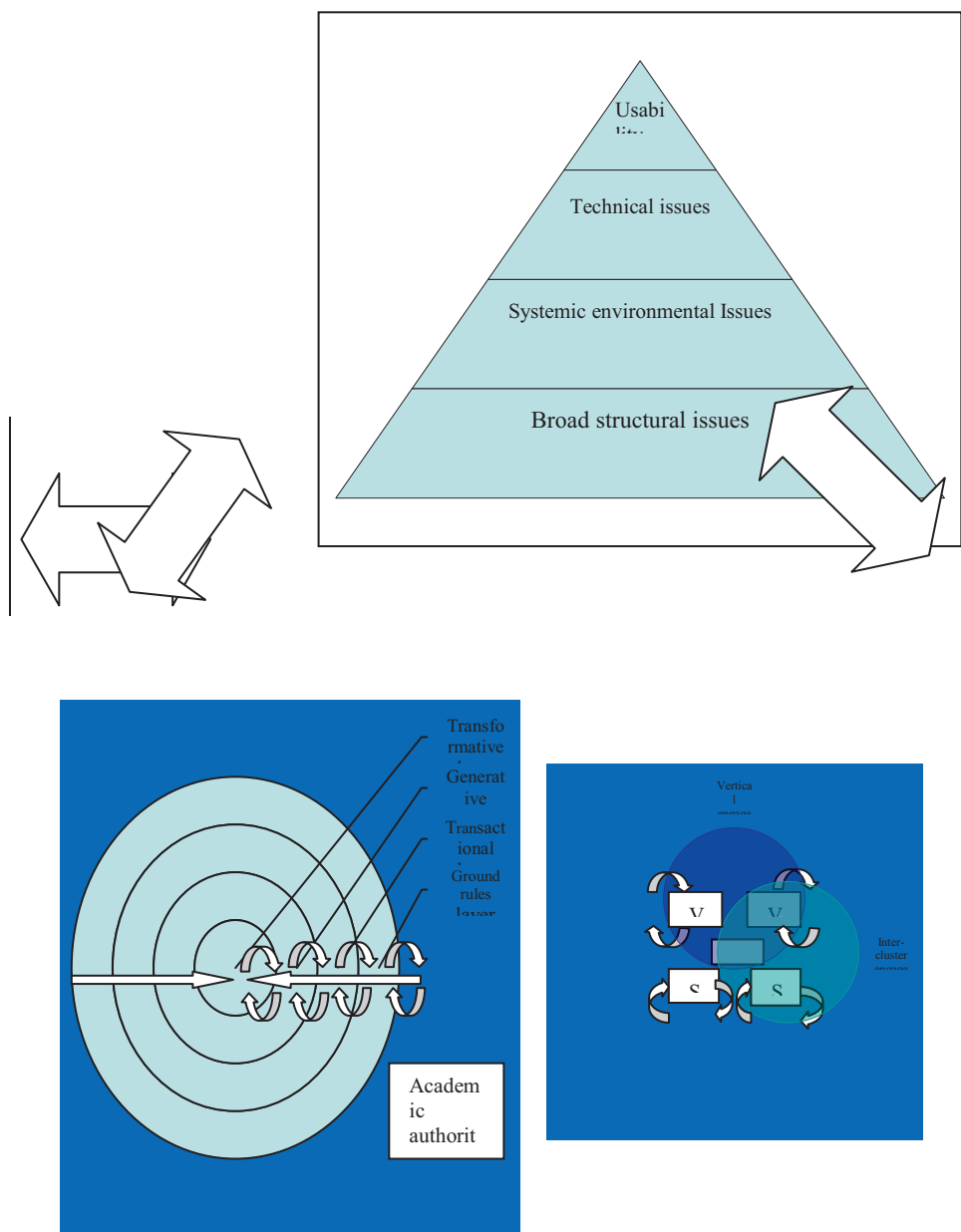


Figure 4: The model of blended mobile social media environment

Implications for pedagogy

Blended mobile social media environments constitute complex academic environments that should allow for intellectual conversations between different learning platforms to support deep forms of engagements and critical inquiry. These environments should be designed to provide the following:

- A thought provoking, discursive (conversational) framework that allows for student deliberative practices, exchange of authentic knowledge and informative feedback processes between the academic communities at different individual, small group and group levels.

- An appropriate synergy between traditional technologies, mobile and social media technologies that provide for situated, networked, and mobile learning in support of meaningful transformative learning.

- Educators should identify different combinations of technologies and pedagogical strategies that support the different layers of academic authority and engagements to generate student sustained interest in deep learning and self-regulated inquiry in multiple learning spaces.

- The broader technology mediated learning community ranging from educators, system designers, technology support staff and university administrators should find their voice, place and purpose within the framework of the three domains (as individual entities) and after their integration to ensure a balanced, sustainable environment for deep learning.

Conclusion

This intellectual exposé has rendered motivations behind the support and critique of blended learning, the current architecture of implementation of LMS at South African HEIs, the possible complementarities of mobile and social media learning environments to learning via LMS and the principles for the successful establishment of blended mobile social media environments. The chapter flagged some caveats on the current pitfalls in the operation

of LMSs in South Africa namely, their transmission mode, their incapacity to deliver social, relational and playful learning, their overreliance on institutional networks, their sub-optimal engagement capacity (even when supplemented by collaborative learning tools) and their insulation from outside learning communities. These limitations constituted the strategic premise for proposing a merger of these environments with more vibrant, social constructivist, and connectivist learning environments (mobile and social media environments) to support user-generation of content, development of third party academic applications and networked learning.

The development of this special purpose model was motivated by multiple factors: the affordances of mobile learning enabled by mobile gadgets, the ubiquity of mobile social networks including student preference to operate in these networks sustainably, the relatively less complex nature of transferability and conversion of social media literacy skills into academic literacy skills and aforementioned limitations of LMSs. That said, extensive training, student and staff development would also be critical to leverage their competencies and skills for productive use of this new learning environment.

The aforementioned deliberations served as a precursor to the understanding of the multiple domains in which knowledge production unfolds namely, the technological, academic authority and engagement domains. The intricate, recursive connections between the different layers within each domain and across domains including their implications for deep meaningful learning were articulated. The synergetic constitution of these three domains to form a blended mobile social media model was illustrated and the implications of the model for pedagogy were discussed. Finally, further studies will be conducted to establish the effectiveness of this model in practice.

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Academic scaffolding and emergent pedagogical change using Mobile Instant Messaging: Appropriating intelligent mobile applications for learning Information Technology at a South African University

Patient Rambe

Abstract

Although mobile phones are recognised as powerful communication devices, their potential to scaffold students in problem solving has been sub-optimally exploited at universities in developing nations. This chapter argues that mobile instant messaging (MIM) presents an informal, information-rich practice for supporting student context-awareness, social presence and on-task behaviour during problem solving. The “mobile complex” serves as a theoretical lens for demonstrating how MIM affords the convergence of student personal agency in problem solving, network-driven cultural practices and structural properties during networked interactions. This qualitative study highlights the appropriation of an instance of MIM, WhatsApp, to scaffold struggling students during problem solving in an Information Technology course at a South African university. It employs a case study approach in which lecturer-student and student-peer consultations on WhatsApp were explored as “gateways” for inferring about academic scaffolding during problem solving and the attendant shifts in pedagogical style. Findings suggest that MIM affords “backstage” opportunities for cognitively-challenged students to solicit real-time academic support, ideal spaces for prognosis of student problem areas and the incorporation of student-centred pedagogical strategies. The recommendations proffered include: constructive alignment of specific support with interactional

contexts, transcending explicit teaching, and heightening engagement through embracing the ontological premises of knowledge production.

Introduction

While student use of handheld devices at university constitutes a new interesting social phenomenon for academic research, the academic application of these devices is yet to be fully understood by academics. Pachler, Cook and Bachmair (2010) argue that educational institutions are fast approaching a critical mass of inexpensive, learner-owned devices that can provide access to learning, raising questions about what curricular functions could be delegated to them. Studies have documented the potential of mobile phones to impact the developmental potential of students through: their delegation of control of pace and style of interaction (Sharples, Taylor & Vavoula, 2007), shifting of the loci of agency and control from academic institutions to students (Traxler, 2011), learner's multimodal production of texts and creation of user-generated contexts (Seipold & Pachler, 2011).

However, the potential of mobile applications to support the deep learning of students in resource-poor contexts of developing countries is yet to be explored. The peculiarities of these resource-constrained environments are discontinuity of device connectivity, erratic network availability, fragmented use and availability of connected devices. As such, the potential of mobile services particularly mobile instant messaging (MIM) to scaffold university student learning has not been optimally exploited in African university settings. Yet MIM presents a potentially serendipitous, context-sensitive environment for scaffolding academically underprepared students who are at the risk of exclusion from effective participation in higher education.

The structure of this chapter is as follows: an overview of scaffolding is given, a literature review on educational application of MIM and a supportive theoretical framework are provided and a

methodology is then articulated. The findings are presented and a discussion and conclusion are rendered.

Scaffolding

Wood, Bruner and Ross (1976) coined the term scaffolding to describe the gradually “phased” assistance rendered by a more knowledgeable/ experienced expert /adult to a novice/child in task performance. It describes the direct and indirect support the expert renders to the novice so that s/he can gradually assume ownership of the task and tools-in-use. The support is usually mediated by tools like language, signs, technology and goal-directed action. For Vygotsky (1978), scaffolding manifests in the expert or knowledgeable peer working at the boundary of Zone of Proximal Development (ZPD) of the learner to extend the latter’s stock of knowledge and independent problem solving. Chaiklin (2003) observes that Vygotsky (1987) provides some hints with regard to the kinds of assistance that children [or learners] can get: — “demonstration, leading questions, and by introducing the initial elements of a task’s solution” (Vygotsky, 1987, p. 209).

Literature Review

Academic adoption of Mobile Instant Messaging (MIM) in South Africa

Although South African learning contexts lack an established tradition of productive use of MIM, the emergent research into productive deployment of text messaging is encouraging. Botha and Butgereit (2012) explored the potential of Dr Maths, an online mathematics tutoring service to support South African learners in mathematical problem solving. This service, which involves university tutors’ provision of support and scaffolding of students in mathematics, is accessed via MXit, a mobile instant messaging service widely adopted by South African youth. Their study reports the potential of Dr Maths to render indirect scaffolding like self-correcting tasks, corrective feedback from experienced tutors, in

addition to environmental enablers like artefacts, peer collaboration, free play and emotive approachability.

Dynamic Frequently Asked Questions tool (DFAQ) is MIM service run on mobile handhelds designed to support both collaborative generation of artefacts (questions and answers) for increasing institutional memory and triggering shifts in mental structures during problem solving. This tool has been widely adopted in mainstream courses (Information Systems, project management, educational psychology) at the University of Cape Town, South Africa. Ng'ambi (2012) argues that DFAQ helps students to overcome the constraints and barriers to equitable communication and engagement in large classes namely: the pressure of individual speaking turns amid a watching audience, expectations for voice projections when contributing to lecture discussions and maintaining democratic engagements in class.

Rambe (2012) explored 26 South African university students who exploited Web-enabled devices to understand the influence of social convergence on student engagement and meaningful learning experiences. Productive educational uses of social media resources included reading and annotation of notes from electronic books, use of Facebook as web browser for accessing academic articles and websites, accessing feedback from supervisors and accessing podcasts. Although Facebook mobile threatened to promote helicopter activities from parents and academics, self-surveillance and procrastination, Facebook-based text messaging was credited for improving students' study skills, promoting engagements literature reviews, organising and managing learning tasks and heightening access to intelligible resources for geographically dispersed students.

The educational potential of MIM is gaining currency in South African academic literature. Makoe's (2008) pilot study on South African distance learners' use of the MIM application, MXit, suggests its potential to foster collaborative conversations in familiar languages, co-generate knowledge and enhance affiliation to an exclusive community. Other studies have embraced general and educational appropriation of MXit (Chigona, Chigona, Ngqokelela & Mpofu, 2009, Kreutzer, 2009). Kreutzer (2009) researched South

African pupils in disadvantaged communities' use of mobile internet. He professes that their use of the Internet for mobile instant messaging was comparatively higher than their computer-based Internet access due to the easy accessibility of the mobile internet.

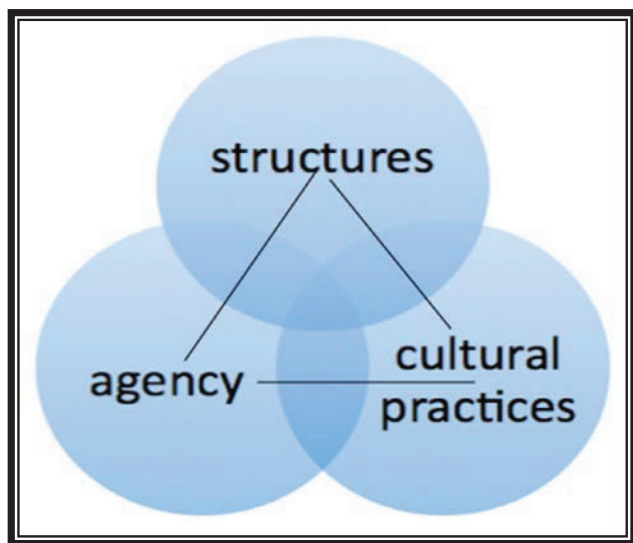


Figure 1: Key components of a socio-cultural ecological approach to mobile learning (Pachler, Bachmair & Cook, 2010: 25)

Theoretical Framework

The social cultural ecology of mobile learning foregrounds the complex relationship between cultural practices, social agency of media users and social cultural structures (see Figure 1). The London Mobile Learning Group (2012) underscores that learning unfolds in the dynamic, non-hierarchical relationship between the mobile learners' capacity to act on the world (agency), routines that users engage in their daily lives (cultural practices) and the socio-cultural and technological structures that govern their being in the world. For Pachler, Cook and Bachmair (2010, p. 2) the *mobile complex* describes the "transformation of the world around us, which is increasingly marked by fluidity, provisionality and instability, where responsibilities for meaning-making as well as other risk-taking have

been transferred from [...] institutions to the individual.” A remarkable expression of the transformation of the world of learning is through student appropriation of low cost, ubiquitous technologies outside university boundaries for collaborative production of knowledge and co-generation of usable artefacts (textual messages, graphics, applications).

Learning in a mobile complex is, therefore, construed as a social-cultural activity that unfolds in a bounded socio-cultural system framed by cultural affordances and constraints as well as historically-mediated actions. It is conceived as a process of meaning-making within social structures, cultural practices and agency (Pachler, 2010, p. 162). Through the mobile complex, Pachler, Cook and Bachmair (2010) envisage a possibility for the scaffolding of mainstream learning through mobile tools, applications and mobile activities. Extending their argument to informal learning spaces, I argue that mobile text messaging constitutes a cognitive bridge through which complex problem solving can be extended from privileged sites (classrooms, laboratories, tutorials) to uncharted informal territories.

Research Questions

1. What forms of scaffolding emerge from the agentic processes of lecturer-student and peer-based problem solving on WhatsApp?
2. In what ways have lecturer’s structural processes especially their pedagogical styles benefited from these interactions via WhatsApp?

Methodology

The case study

The case study was conducted on third year Information Technology (IT) students at a University of Technology in South Africa. The choice of an IT module was informed by the fact that this course comprised previously academically disadvantaged students

who struggled with complex IT problem solving in the course. Their historical academic disadvantage stemmed from the following considerations: Some had limited prior access to networked computers in their high school, some displayed a sub-optimal achievement culture inherited from their underprivileged social-cultural backgrounds, and often lacked family role models with achievement motivation, and had a generally constrained resource base. Emerging from these backgrounds, therefore, these learners were in dire need of supplementary academic support to ensure their equitable, competitive academic participation in class and optimal performance.

The class comprised 95 students who were taught using a blended learning model comprising face-to-face lectures, tutorials and E-Thutho, the university's brand of learning management system. This delivery platform provided lecture materials (lecturer slides, additional reading materials, course module materials) and collaborative tools (blogs, wikis, discussion forums). In spite of the provision of these diverse learning resources, students struggled with effective accomplishment of their assignments thus necessitating a multi-pronged scaffolding mechanism. As such, the IT lecturer adopted WhatsApp, a MIM application to support and guide students with impromptu feedback

on questions, queries, requests for explanations and elaborations of complex concepts and problems. WhatsApp served to scaffold students in complex problem solving beyond normal consultation times and lectures.

WhatsApp Application

WhatsApp is an MIM service run on Web-enabled devices (smart phones, personal digital assistants). It allows for abundant messaging at a very low cost and affords the interaction of clusters of users of up to 11 users per cluster. Messages sent while the mobile device is switched off or offline are accessible immediately when the device is switched on or online.

The lecturer formed student clusters comprising up to 10 students per cluster and required them to join WhatsApp. Seven

online clusters emerged and lecturer was the 11th member on each cluster. Students were expected to consult online with peers in their cluster and across different clusters on academic issues using questions, queries and answers. They sought elaborations and explanations of theoretical and practical questions via WhatsApp. The lecturer also provided supplementary materials and posed a uniform question to each cluster after lectures and elaborated on issues discussed in class via WhatsApp and vice versa. Students used their mobile numbers as their log on IDs to ensure the anonymity of interactions and to enhance the participation of less confident, shy and academically-challenged students.

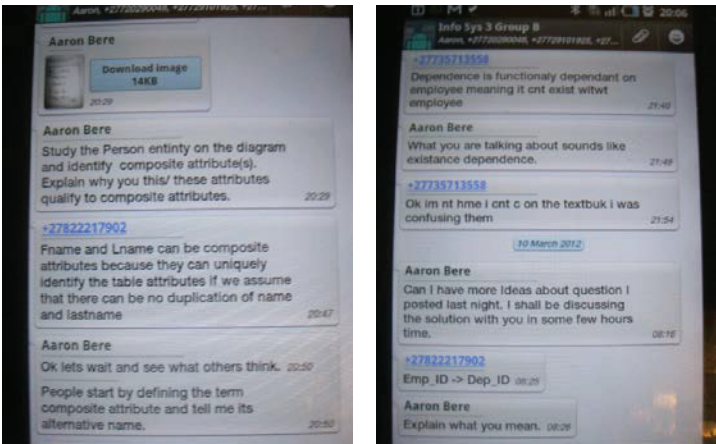


Figure 2: The left figure shows the lecturer’s illustrative diagram and question for students while the right figure shows the lecturer probes and enlists student responses.

Analytical Framework

The analysis brings Pachler, Bachmair and Cook’s (2010) socio-cultural ecological approach to mobile learning in conversation with Berge’s (1995) categorisation of scaffolding, and categories developed from excerpts of lecturer-student and peer-based consultations via WhatsApp. The socio-cultural ecological approach, revolves around:

- **Social structures**, which underpin *convergence* of diverse mobile multimedia, different contexts and *milieus* created through user-generated content and interaction across different individualised contexts, meaningful media reception emerging from *fragmentation* of information, *provisionality* of knowledge and *discontinuous* text structures.

- **Agency** involves *appropriation* of technologies and artefacts for meaning making amid structural constraints, *meaning-making* processes, and a *new habitus of learning*.

- **Cultural practices** –underscore the utilisation of everyday life worlds and experiences as learning spaces. They involve *normalisation*, *self-expression*, *communication*, *user-generated content* and *contexts*.

Berge (1995) categorises scaffolding into four main types: pedagogical, social, managerial and technical (cited in Ozan & Kesim, 2011). The application of these typologies is summarised in the table below:

Presentation of Findings

Pedagogical scaffolding

The processes of lecturer-student and peer-based problem solving unfolded through various techniques like probing, seeking explanations and justifications for arguments raised, emphasising critical concepts and constructs and open critique. Essentially, both the lecturer and students employed multiple scaffolding strategies in complex problem solving.

Table 1: Analytical Framework (Adapted from Pachler, Bachmair & Cook, 2010; Berge, 1995)

Category	Type of scaffolding and their descriptions	Category	Exemplars of lecturer and student excerpts
Cultural practices Normalisation Communication Self-expression	Pedagogical ▪ Expert’s contribution to disciplinary knowledge ▪ Insights on discussions ▪ Using questions and probes to encourage student responses ▪ Focusing discussion on critical concepts	Probing questions Justifications Explanations Foregrounding critical concepts / constructs Open critique (New Category)	Explain the concept of functional dependence using the diagram, above (Lecturer Question (LQ) 16) DOB and Pname are not PK and thus cannot be used to identify anything in that table (Student Query (SQ) 19) I think FD can only happen with identifiers, thus we cannot consider name and DOB as identifiers in this case Functional dependency describes a relationship between attributes in a single relationship. An attribute is functionally dependent on another if we can use its value to determine the value of another (SQ 20) People start by defining the term composite attribute and tell me its alternative name (Lecturer Query (LQ) 14) But can determining FD handle the entities on their own or is it linking between entities (SQ 19) Why is the web and optional, and software and mandatory (SQ 33) Mandatory means that a student must be one of the two, either Software or Web. It is compulsory to pick one of them. Option means there is some choice eg Web can take all three subjects or only 2or even 1 (Lecturer response 47).
Social agency Appropriation	Social ▪ Fostering	Appeals for	Sir could you please come to our

Meaning making	human relationships, ▪ Affirming and recognising students' inputs, ▪ Rendering opportunities for students to develop a sense of group cohesiveness, ▪ Maintaining the group as a unit, ▪ helping students to work together in a mutual cause	guidance Peer affirmations Exhortations Maintaining group cohesion	rescue? (SQ 15) You are right. FD is an entity. Which is why I chose to only use PK and FK (Student Response (SR) 19) Keep going (SQ 20) Post your answers and respond to other students' postings [...] (LQ 15) May God be with u to calm you down my friends. Remember what u put in is what you get out (SQ 37)
Social structures Milieus Fragmentation of information Provisionality of knowledge	Managerial ▪ Concerns organizational, procedural, and administrative activities. ▪ Providing objectives, ▪ Setting timetables, ▪ Setting procedural rules and decision-making norms	Imposing sanctions (New category) Scheduling tasks Enlisting responses Scheduling rules and norms	I didn't get enough answers for the question posted yesterday. If you don't want to participate I will close group like I did to group A. (LR 37) 9467 unload your image and we can talk from there (LR 44) Discussions on this shall be open the entire night What do you say sir (Student Query 18) Can I have more ideas about the question I posted last night. I shall be discussing the solution with you in a few hours' time (LR 73) Ok let's wait and see what others think (Lecturer's post) Sir I am busy with the project is it ok if I give you the answer tomorrow (Student response) People start by defining the term (Lecturer Query (LQ))

Phasing and fading

Phasing and fading off support involves the provision of basic information sufficient to initiate academic conversations, generate enthusiasm and the critical mass in complex problem solving. This scaffolding is followed by progressive waning of support (fading) as students grasp the task holistically and assume full responsibility for independent problem solving. A typical example of this technique involved the lecturers' description and definition of critical constituents of the task as shown below:

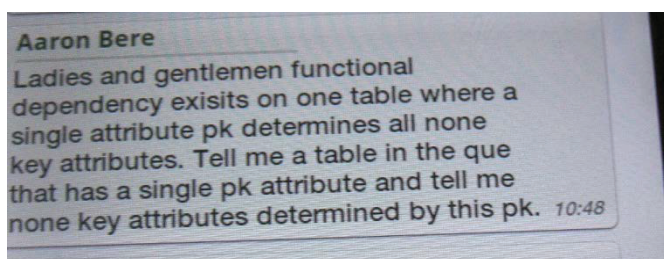


Figure 3: The lecturer's phasing and fading of support

Highlighting critical elements of the task helped students to pay selective attention to essential task elements only as a precondition for successful problem solving. Productive learning unfolded as students progressively employed knowledgeable peers and lecturers' cultural artefacts (clues, leading questions) to engage in individualised meaning making drawing on their contexts and learning histories.

Critical Questioning

Critical questions and probing generated student explanations that enhanced their peers' assessment of their depth of understanding of the problem and possible solutions. The recruitment of multiple explanations and elaborations exhibited the provisionality of knowledge as students drew from multiple cultural resources (individual texts, objects, artefacts) to make sense of the technical

problems. Below is an example of a student explanation in response to a peer's question.

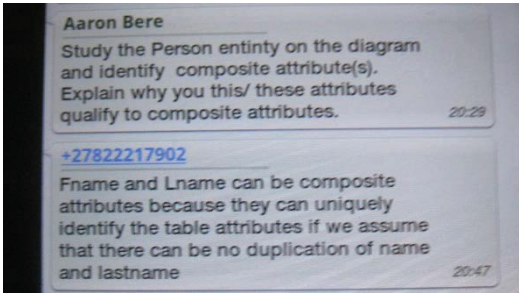


Figure 4: Example of student explanation.

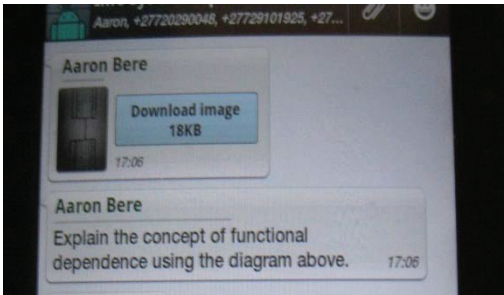


Figure 5: Direct Questions

Direct Questions

Direct questions served as ice breakers for stimulating and sustaining conversations between the lecturer and students. They left some imprints on student minds on the knowledge structures to be constructed and activated recursive meaning-making processes through their engagement with discontinuous texts. Direct questions also hived off extraneous information that increases the cognitive load of students and usually complicates the processes of logical problem solving. Although they imposed normalising discourses through the formalisation of speaking turns and identity markers that located academic authority (agents imposing conditions for dialogue

and expectations for responses, relationship structures), direct questions served as instruments for engendering academic self-expression for all students.

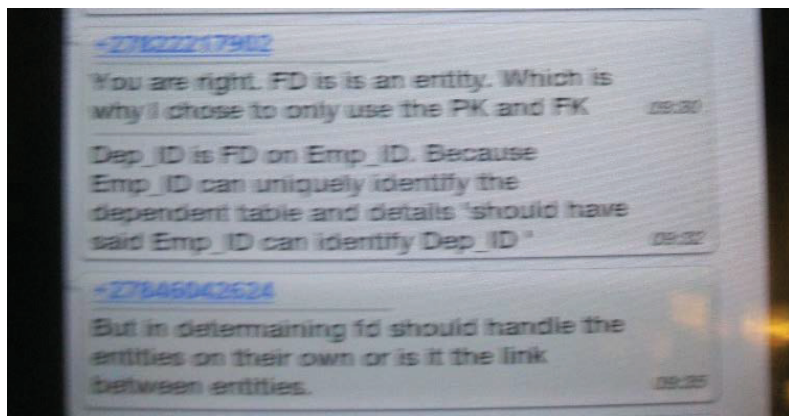


Figure 6: Open critique of peers

Open critique

Structural processes of communication unfolded through open critique among peers. The provisionality and contested nature of knowledge manifested in the presentation of multiple perspectives in problem solving. Through open critique, existing mental structures were often questioned, subverted and replaced by new ones as new knowledge was created.

Social scaffolding

Social scaffolding revolved around the fostering of human relationships, affirming and recognising students' input, rendering opportunities for students to develop a sense of group cohesiveness, and helping students to work together in a mutual cause (Berge, 1995). It manifested in student appeals for guidance, peer affirmations of student postings, exhortations and maintenance of group cohesion. Students adopted WhatsApp to engage in daily cultural practices that ensured their constitution as a collective learning community and fostered a sense of belonging among them.

They recreated their individualised and collective (group) contexts by appropriating cultural tools and resources (IT images, diagrams, textual messages, emoticons) to communicate their thoughts and ideas in problem solving and engage with peers across contexts (inter-group interaction).

Managerial scaffolding

This manifested in the lecturers' imposition of sanctions on uncooperative students, normal scheduling of tasks, enlisting responses from all student groups on WhatsApp and setting and scheduling of interactional rules and norms. Unlike other forms of scaffolding, managerial scaffolding was an essentially hierarchical engagement dominated by lecturer control. Lecturers moderated interactions through rules and norms that regulated “speaking turns” and the flow of interactions to give all students equal opportunities to engage in problem solving (see Figure 7).

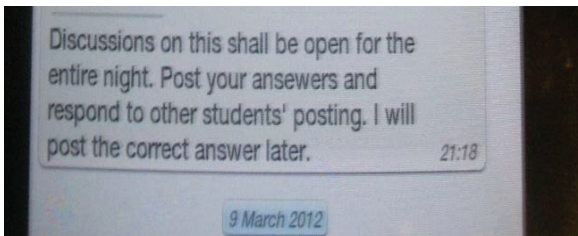
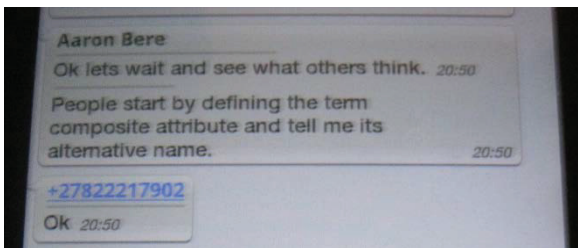


Figure 7: Scheduling rules and norms constitutes a structural property.

Besides the regulation of speaking turns and moderation of interaction formats, the lecturer also supported interactions through the scheduling and management of consultation times (See Figure 8). This scheduling invited student engagement on WhatsApp at designated times and the co-generation of solutions to IT problems.

Impact on pedagogical style

Peer-to-peer mentoring

The lecturer expected students to engage exhaustively amongst themselves in different clusters before they could solicit his support during WhatsApp discussions. He required students to post their queries to their group members, solicit their peers' responses and engage with those responses without his direct involvement. Peer-to-peer mentoring, therefore, unfolded through peer-direct questions, peers' justifications of positions they took, their explanation of ambiguous or complex concepts and sharing of supplementary information to clarify issues or meaning of concepts. The lecturer was only involved at two levels, namely, the provision of summaries of student discussions that highlighted the main ideas generated and the provision of a uniform question to all clusters, which was based on the theme of the discussion for the day. Apart from these, the lecturer just maintained a social presence and only engaged when invited to do so. Peer-based coaching, therefore, constituted a shift from the transmission and instructivist modes that normally characterised this lecturer's lectures.

Group mentoring and foregrounding essential task elements

The lecturers' provision of one uniform question per discussion (to all clusters) and synthesis of concepts which students had discussed on WhatsApp supported a "collective approach" to instruction and dealing with student problems (see the lecturer's follow up instruction to his question below). For the lecturer, these uniform questions and "blanket" responses / summaries constituted a shift from personalised teaching (often rendered during individual office consultations or immediately after lectures) towards group

mentoring of students. This shift in pedagogy often reduced the number of redundant questions from students during question and answer time in lectures.

The use of instant messaging to support out-of-the classroom interaction enabled the lecturer to foreground critical issues during in class demonstrations and online. Such foci included expectations for students to provide definitions of terms during problem solving and deconstructing essential features of complex tasks (see extracts below).

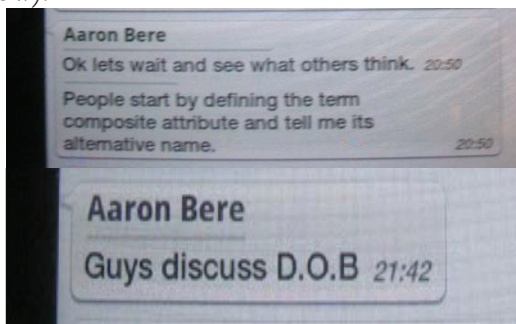
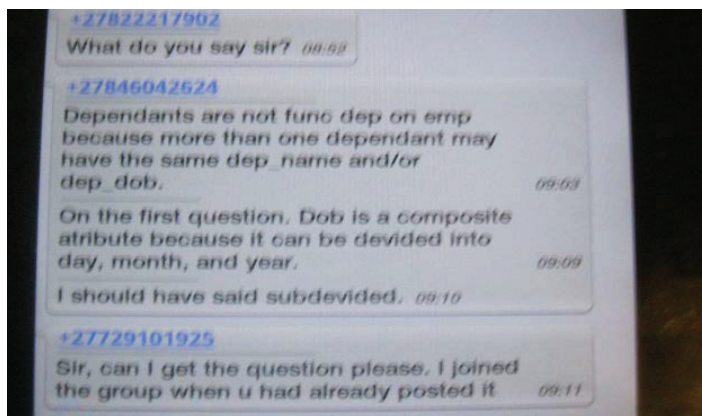


Figure 8 shows lecturer's scheduling of interaction times

Emphasising critical elements of the tasks contributed to explicit teaching that lifted the cognitive load of struggling students and allowed the lecturer to concentrate his support on aspects least understood by students. The repetition of complex concepts alone saved the lecturer's contact time allowing him to devote his attention to these concepts-itself a more focused, intentional approach to teaching.

Reversal of roles

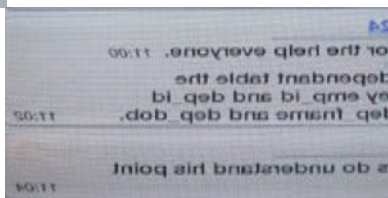
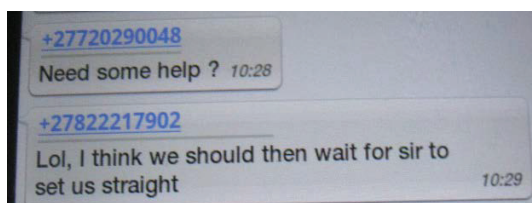
In traditional lectures, the lecturer dominates the interactions by posing critical questions and expecting students to respond to a hierarchical question-answer-feedback mode. The mediation of an MIM, WhatsApp, replaced this interaction mode with a social constructivist learning environment in which students engaged in talk back processes and solicited answers from the lecturers (see below)



Statements like “*what do you say sir?*” and “*sir can I get the question please?*” are all indicative of the talk back processes of students and the disruption of hierarchical engagements. The soliciting of responses from the lecturer also allowed students to participate in meaning making processes with instant academic feedback. Such rapport can be contrasted with the summative assessments (quizzes, tests, exams) that are normally given as follow ups to traditional lectures. The student inquiries served as “windows” for the lecturer to access students’ mental structures during problem solving and academic levers for adjusting the strategies of content delivery. Such reflective processes are normally inconceivable in classrooms due to constraints of time and course load. These talk back processes also helped to reduce the number of lessons devoted to revision before examination times.

Prognostic assessment of student understanding

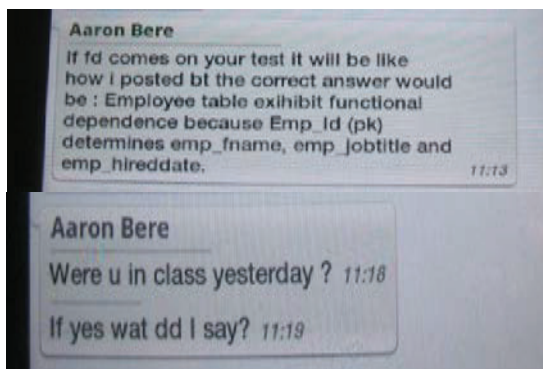
The dialogic nature of WhatsApp interactions enabled the lecturer to identify struggling students, to customise assistance and to tract students’ collective psychological development trajectory (see postings below). Prognostic determination of problem areas enabled the lecturer to offer immediate impromptu feedback rather than wait for remedial action after summative assessments (quizzes, tests, and examinations). WhatsApp, therefore, transformed informal assessments from the normal summative to formative.



Anonymous communication on WhatsApp enabled all students to present their queries without fear of prejudice or ridicule. This enabled the lecturer, Mr Bere, to adjust his teaching style according to his perception of student understanding. The feedback loops which the lecturer generated through inquiring students' understanding of content (see lecturer's inquiry above) often activated responses from peers.

Eclectic learning

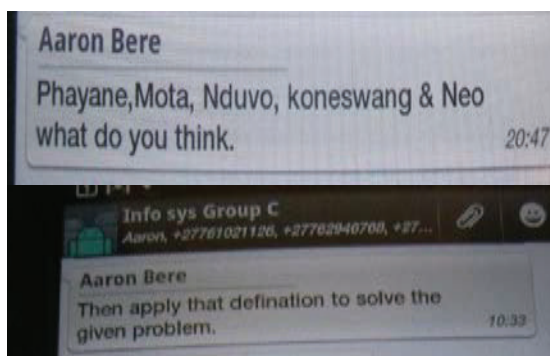
WhatsApp enabled the lecturer to link current tasks to future engagements systematically. Not only were students made conscious of current assignments but were alerted to the connections between present tasks and future commitments (see lecturer's postings below)



The connection of present tasks to future assignments enabled students to appreciate the eclectic nature of learning. Rather than promote serialised learning, students had to draw on multiple “pockets” of information in their knowledge building. Through these connections, students’ cognitive load during complex problem solving would be potentially reduced as the anxiety of uncertain future tasks diminished.

Balanced participation

From a class management perspective, the transparency of participation on WhatsApp allowed the lecturer to overcome the asymmetry of participation that normally beset large lectures. The disintegration of the classes into manageable clusters permitted the lecturer to democratise participation by soliciting the involvement of the silent, and less confident students (see below).



Besides promoting more democratic participation, WhatsApp enabled the lecturer to foreground the application of learned concepts by students. The conceptual understanding would be demonstrated by requiring students to apply learned concepts and give feedback to the lecturer (see posting on the right above).

Discussion

Pedagogical scaffolding

The semblance of pedagogical scaffolding manifested in heuristic instructional practices like probing, critical questioning, open critique, seeking justifications and explanations and foregrounding disciplinary concepts. As such, pedagogical scaffolding was deeply embedded in lecturer and student's every day and historically-mediated cultural practices. Cultural artefacts (leading questions, critical questions, discipline-based constructs and concepts) and semiotic tools (directive language, psychological signs, mental modelling of future behaviour) served as cognitive bridges that connected student prior knowledge with new knowledge. Therefore, through the appropriation of WhatsApp cultural resources and tools, students generated new contexts and milieus that enabled them to make sense of complex problems. As Seipold and Pachler (2011, p. 5) reiterate, through appropriation [of technological tools and artefacts], users select those resources that are relevant for them in their meaning-making process against the background of their individual history with reference to their agency and cultural practices. They elaborate that such selective and conscious choices enable them to “construct new structures and contexts which are, in turn, meaningful in relation to already existing structures and in relation to the users' life-worlds” (Seipold & Pachler, p. 5).

Contrary to a prescriptive, production-based model of delivery that lectures produce and reinforce, the mobile learning complex, which WhatsApp created, compressed hierarchical structures of knowledge dissemination by affording students the agency to participate actively in production and reconstitution of distributed chunks of knowledge. This mediational effect coheres with findings in literature. MIM enables learners to “generate and transmit content for learning, [...], making mobile systems an integral part of the Web2.0 ideology that takes users from merely Web's readers to its writers” (Traxler, 2011, p. 13). Essentially, cultural practices were expressed through normalising discourses like critical questions that framed and confined the expected responses in addition to other

liberating practices like communication and affordances for self-expression. As such, problem solving was deeply implicated in the lecturer's contribution to disciplinary knowledge and mind control through the sequencing and formalisation of discourses.

Social scaffolding

Accoutrements of social scaffolding were self-evident in student appeals to the lecturer for guidance when they were psychologically challenged by complex problems. Other expressions included peer affirmations of students' answers, exhortations and maintenance of group cohesion. Statements like "*Sir could you please come to our rescue?*", "*You are right. FD is an entity*" and "*Keep going*" are appeals for assistance, affirmations and exhortations respectively. Some students also appropriated WhatsApp to overcome the challenges of psychological disadvantage and academic seclusion. The statements "*May God be with u to calm you down my friends. Remember what u put in is what you get out*" sound like moral appeals to friends to persevere in the face of academic complexity.

Managerial scaffolding

Scaffolding also played out in the subtle forms of compulsive participation. The statements "*I didn't get enough answers for the question posted yesterday. If you don't want to participate I will close group like I did to group A*" demonstrate the directive elements in the lecturer's instructional strategies. Institutional sites are strongly characterized by techniques of power that have a direct corporeal effect, what Gowe (2002, p. 7) calls "more corporeal configuration of techniques, that is, distribution, surveillance and regulation." The normalising effects of power as expressed by pedagogy allowed academics to reconfigure and recreate the milieus of academic interaction. Academic agency underpinned by scaffolding techniques often enabled the re-enactment and reproduction of structures of domination through regulative behaviour and imposition of mental controls on students.

Enlisting some on-task behaviours (like the uploading of images as conditions for discussion), encouraging group discussions and task

scheduling rules and norms constituted productive forms of extending students' zones of proximal development. Statements like "[student] 9467 *unload your image and we can talk from there*" and "*Ok lets wait and see what others think*" are reminiscent of lecturer scaffolding through identification of essential task elements for students and development of group cohesion respectively. The lecturer's announcement that "*discussions on this shall be open the entire night*" signifies the potential of mobile phones (specifically MIM) to bridge formal and informal learning situations (Cook, 2007). From a structural perspective, the *provisionality* of knowledge and contested nature of decontextualized, discontinuous chunks of texts (Seipold & Pachler, 2011) manifested in the recursive dialogicality of knowledge generation.

Implications for pedagogy

From asymmetry of participation to more engagement

The academic mediation of WhatsApp exposed the asymmetry of academic participation that normally persists in large classes. While WhatsApp's anonymity enabled some shy students to pose questions, it is the quality engagement that sustains conversations over a long duration. Academics should, therefore, educators should devise strategies for using conversational technology to promote more quality engagement. Meaningful engagement would contribute to the overcoming of the reproduction of academic prejudice and psychological disempowerment of academically underprepared learners. This is particularly so in IT courses, where academic participation of such groups is normally limited in South Africa.

Embracing transformative learning

When students pose content-related questions and engage in meaningful dialogue with the lecturer, opportunities for transformative learning unfold. Academics are therefore, called upon to engage students in talk-back processes not only at technical problem solving levels but rather at the epistemological foundations of knowledge. Inculcating student consciousness about the eclectic

nature of knowledge production should be tied to epistemological questions about how we come to know and how knowledge is constructed, reconstituted, and deconstructed.

Insufficiency of explicit teaching

The study reports that the use of WhatsApp made teaching more explicit. However, making knowledge generation more explicit is a necessary but insufficient foundation for deep learning by students. Connecting past knowledge with new information should be buttressed by a deeper understanding of the structural (ontological) premises of knowledge constructed.

Conclusion

This work has examined the diverse variants of academic support that a South African university lecturer offered to students via a mobile instant messaging service, Whats App. WhatsApp provided a serendipitous, information rich, interactional space through which students with difficulties consulted with each other and the lecturer. Context awareness afforded by this space enabled student on-task behaviour during problem solving and diverse forms of scaffolding to occur. The mobile complex served as a useful framework for understanding the intersection of student daily cultural practices (texting culture, information seeking behaviour, peer-based network support systems, and questioning culture) with broader structural properties of pedagogy and student agency in complex problem solving. Instantiations of scaffolding namely pedagogical, social and managerial were identified and their practical manifestations were explored. The implications for pedagogical change, which are: transcending explicit teaching, embracing the epistemological foundations of technology mediated pedagogy and quality engagement during complex problem solving have been articulated.

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Privatisation of Tertiary Education in Developing Africa: Challenges and Implications for Quality with Reference to Mozambique's University Education

Munyaradzi Mawere

Abstract

While privatisation has been implemented in many African tertiary institutions in an attempt to minimise government expenditure and sustain academic activities in the respective institutions, it has been met with serious challenges in many African universities. In Mozambique, for example, privatisation of tertiary education is facing challenges like criticism from the general public and allegations that it compromises education quality and quality education provision. This chapter examines these challenges with a view to understand their nuanced implications for educational effectiveness and quality. Informal discussions and semi-structured questionnaire were used as theoretical lens and data collection tools. Findings suggest that privatisation of these tertiary institutions has resulted in structural 'bottle necks' education, caste education system, exclusion of disadvantaged children from the mainstream tertiary education and compromised the quality of education in the country. The study recommends government subsidies for students from disadvantaged backgrounds to lift them from their deep-seated poverty while simultaneously improve education quality in the country. It also argues that if quality education that embraces high competence in critical literacy, dedication and hard working of university educators in a fragile post-conflict landscape such as that of Mozambique is to be achieved, collaboration with other 'well established' universities in the region and beyond remains a necessity.

Introduction

The development of modern universities is associated with a painful history of slave trade, colonialism, civil wars and bad governance, among others. In Africa, the aforementioned phenomena have not only affected the African economies, but have also adversely affected the continent's education systems though at varying degrees. At the heart of colonialism, for example, was the establishment of many African universities. In the case of Mozambique, the first university, Universidade Eduardo Mondlane (UEM), was founded in 1962, a period when the country was facing serious destabilisation.

Worth noting is the fact that the post independent Mozambican higher education was expected to play a crucial role in providing human capital needed to get the country functional. Like other African universities (in formerly colonised states) developed during colonial period such as the University of Zimbabwe, UEM received funding from the former colonial master, Portugal to sustain its financial and academic activities.

Also worth considering is the fact that with the attainment of independence in many African countries, basic education (primary education) was universalised. Yet, while basic education in many African countries, including Mozambique, was universalised and/or made free after independence, this has been different for tertiary education. Tertiary education being somewhat expensive, many African countries have after their colonial independence privatised tertiary education, that is, college and university education. As highlighted above, the underlying argument for privatising tertiary education was that it is expensive for developing countries to run them using government funding. As such, students were required to pay for their tertiary education in order for the tertiary education to continue functioning. Yet, privatisation in many developing African countries as elsewhere in the world has met with numerous problems.

Mozambique is one African country that has privatised its tertiary education since the 1990s with the institution of policies such as

Economic Structural Adjustment Program (ESAP). ESAP was a western based policy that encouraged African countries to liberalise their economies and other such systems as education so as to contain inflation and register a steady growth in national Gross Domestic Product (GDP). This is echoed by Kanyenze (2004: 127) who notes that the main targets of this market driven programme (ESAP) in developing economies were:

To achieve GDP growth of 5 per cent during 1991-95, raise savings to 25 per cent of GDP, raise investment to 25 per cent of GDP, achieve export growth of 9 per cent annum, reduce the budget deficit from over 10 per cent of GDP to 5 per cent by 1995 [and] reduce inflation to 10 per cent by 1995.

Yet, despite the documented failures of ESAP in many countries in the world to achieve the intended goals, mainly due to poverty many African countries found it difficult to reverse privatisation in tertiary education even after the failure of ESAP in their own countries. Thus privatisation, though with its own problems, has remained a common feature in many African countries and systems such as tertiary education.

In Mozambique, this was in spite of the fact that privatisation of tertiary education came as a contradiction to the country's post-independence public education program (*educação para todos*/education for all) which is a government initiative meant to address education inequalities in the country that were instigated and perpetuated by the Portuguese regime. As such, given that Mozambique is one of the poorest countries in the world, privatisation of tertiary education came as a shattering blow to many Mozambicans who having been denied access to education during colonial and civil war periods were once again denied access in the so-called independent Mozambique. The system saw more students from rich families enrolling in tertiary education while those from humble backgrounds dropping out and remain trapped in their cycles of poverty. The issues of education effectiveness, quality and most importantly equity thus were disregarded, hence compromising the general quality of education in the country and the region at large.

That said, this study examines the challenges and implications of privatisation of tertiary education in developing African economies and in particular, Mozambique. Informal discussions and interviews are the major data collecting techniques used in this study. It is acknowledged that this important project should have covered all universities in the entire country (Mozambique) in order to capture the implications and challenges encountered by all stakeholders as a result of tertiary education privatisation. However, due to limited resources this was rendered impossible.

As such, the study adopts tertiary institutions in the country's southern provinces namely Maputo and Gaza. Educators, guardians and students from four tertiary education institutions in these two provinces were chosen at random during data collection. The choice of Maputo and Gaza provinces was premised on the fact that the two provinces have the majority of tertiary institutions in the country. This connotes that they are the most affected in the country such that they represent other Mozambican provinces with the same problem. The relevance and justification of this research may be seen in how far it supports or refutes or even rebut prior claims about privatisation of tertiary education amongst the Mozambican population, and of course, beyond Mozambican borders.

Background to Mozambique's Tertiary Education

To fully understand the background of tertiary educational system and privatisation in Mozambique, there is need to briefly look at the structure of the schooling system and how it impinges on tertiary education as well as the history of tertiary education itself. The next sections therefore examine the aforesaid themes.

Structure of the schooling system and how it impinges on tertiary education

In Mozambique, the education system consists of 7 years of primary schooling, and this was made compulsory by the Education for All Program (*programa de educação para todos*). The children normally found schooling at this level range from the age of 7 to 13. This level

is followed by 5 years of secondary schooling before students can enter college, university, or other tertiary institutions for further training or specialization. Since at tertiary level, students will begin to specialize for long life areas of specializations yet vacancies/ places are normally limited, transition from high school (grade 12) to tertiary education level is often difficult and competitive. It is in fact determined by the performance of the student in national examinations at Grade 12 and the university entrance test. While this kind of selection process is said to be used in part to ensure justice and transparency in the criterion for selection of students for tertiary education, it is also purported to guarantee quality of students enrolled. Yet this noble and fair method of selection was compromised by privatization as with the latter what matters most is money and not the quality of student. In other words, though entrance examination is still used as selection method for tertiary institutions, students who excel in the examination may fail to secure vacancies while those underperformed secure vacancies simply because they have money.

History of tertiary educational system in Mozambique

In Mozambique, tertiary education covers all universities, technical colleges, polytechnic colleges, teacher's training colleges and other vocational skills training centres. Also, worth noting is the fact that tertiary education falls under The Ministry of Higher Education and Technology. In this study, all other institutions except universities will not be discussed in detail. As such, in this study the concept of university shall be used interchangeably with the concept of tertiary education.

Mozambique is one of the countries in Africa with both sad histories and a plethora of systems, including education, too complex to characterise with precision. As I argued elsewhere:

The complexity of Mozambique's systems is predicated on the country's long tumultuous history under the Portuguese dominance, sixteen years of civil war after independence from Portugal in 1975, crippling poverty levels, rising levels of unemployment, lack of adequate training and limited deployment of

public personnel to underserved communities, and adoption of Portuguese as an official language after independence. The complexities of Mozambique's systems are thus not only visible in the country's economic and political systems, but in social landscapes such as education (Mawere, in press).

Focusing on the latter (education in Mozambique), it is worth noting that most of Mozambique's tertiary education institutions were put in place during the resuscitation phase and with the objective to educate all and eradicate poverty in the country. This phase coincided with the world economic recession and the Economic Structural Adjustment Program (ESAP) in the 1990s in the country. In fact, ESAP was prescribed by the International Monetary Fund (IMF) as a panacea to the world recession especially in developing economies such as Mozambique. In the case of Mozambique, this market driven programme forced the country to move away from its socialist to capitalistic ideology. This saw the liberalisation of national economy and/or privatisation of government institutions including tertiary education heretofore referred to as education. Privatization of all government institutions including education was believed to be a vehicle of change that would expedite and improve the country's socio-economic status, lessen the government's financial burden and expenditure. As such, all education systems in the country found themselves being privatised during resuscitation phase, a situation that stands to date. This was indeed different from the early years of the universities in Africa and in particular in Mozambique when there was still one University in the country, Universidade Eduardo Mondlane. Education was free and matriculation based on merit. Thus since the 1990s, the share of the education sector in the national budget as a percentage of the gross national product has been on the decline resulting in the Ministry of Higher Education and Technology being unable to fulfil its obligation of providing the necessary facilities to ensure universal availability of quality and effective education.

The role and importance of tertiary education in the context of Mozambique

The world over, tertiary education is considered as the provider of quality human capital that keeps the country's socio-economic and political landscapes remaining functional. As such, tertiary education is highly considered.

Yet, while public and private investments in higher education served to boost university resources in the 1960s and 1970s, the last couple of decades have seen a decline in public funding for higher education as economic recession affects countries worldwide (Bartelse 1995; Squires 1983). Mozambique was no exception to this global crisis. As noted by Ng'ethe et al (2003), the decline in funding, together with related trends, can also be traced to the ascendancy of neo-liberal policies of fiscal restraint, minimalist government and reduced social spending that have become globally dominant under Economic Structural Adjustment Programmes (ESAPs). In the late 1980s through 1990s, UEM, Universidade Pedagógica (UP), and other tertiary institutions, for example, could not get all the finances they required from the government due to financial and political crises in the country. During the same time, Mozambican government prioritised basic education. This gesture was in accord with the call by donors of the time that focused their attention on basic and secondary education in developing countries. This was exemplified, for instance, by the World Bank which reduced its funding for higher education from 17% to 7% between the years 1985 to 1989 (World Bank, 2002), as it allocated most of its funds towards basic education. The rationale for World Bank's recommendation to shift international lending from tertiary education to basic and secondary education was based on the following reasons:

1. That basic and secondary education was generally conceived to have a higher return on investment than tertiary education, both in the short and immediate terms.

2. That basic education is basically a fundamental right compared to university education and that those in university education are already privileged and hence we cannot address inequity by financially supporting elites at the top echelons of the academic pyramid.

3. That university is an autonomous entrepreneurial institution. As such, universities have to devise productive and creative ways of generating additional income than to rely on national governments. As autonomous or quasi –autonomous institutions, they had to fend for themselves.

This however, did not mean undermining the value of higher or tertiary education by the World Bank. In fact the World Bank (2002) has always upheld the importance of higher education not only in nation building but also for social cohesion and democratic participation of citizens. The upholding of the value of tertiary education was manifested in 2000, when world leaders adopted the Millennium Development Goals (MDGs) set to be achieved by 2015. The MDGs provides a framework to ensure that human development reaches everywhere and everyone (UNDP, 2010). With that framework, tertiary education is considered as the major vehicle in achieving the MDGs as it is expected to produce adequately trained human resources to carry out the required developmental and research activities of whom. This is predicated on the understanding that the major purpose for establishing universities was for the institutions to play a pioneering role in addressing social, economic and political issues of national interest. This grand purpose of any university the world over was aptly captured by the Lockwood Report (1963) that noted:

The university must be responsive to the real needs of the country and be an institution, which on merit will win the respect and proper recognition of the university world. ...it must combine practical service to the nation with fulfilment of the historical purposes of a university as a seat of learning, a treasure house of knowledge and a creative centre of research.

This is further stressed by the Word Bank (2010) which notes that higher education is a catalyst to innovations in agriculture, new materials, sources of energy, all of which play an important role in reducing poverty, achieving food security and improving health care facilities.

The brief background to the Mozambican tertiary education and tertiary educational landscape in general articulated above have been sketched in order to set the stage for my informed analysis and critique of the implications and challenges that has been marshalled and instigated by privatisation against the country's tertiary education system.

Research question and Methodological Issues

The findings presented in this research are drawn from the data that were collected from participants in Mozambique between 2011 and 2012. As previously noted, the objective of this research was to obtain comprehensive information about the challenges and implications of privatisation of tertiary education to the general quality of education in Mozambique, and to some stakeholders such as students, parents/guardians and educators/lecturers. An additional objective was to explore possible solutions to the challenges caused by privatisation of tertiary education from the directly affected people.

In this light, the study addresses the following research question: What are the implications of privatising tertiary education in Mozambique for educational effectiveness and quality?

In addressing this question, my extensive research and wealth teaching experiences in Mozambique's secondary and tertiary education helped greatly. From my research and teaching experiences, I have come to the realisation that most researchers on Mozambican education (Mario 2002; Mario & Nandja 2006; Mulkeen 2005; Chaudhury et al 2006; Rambe & Mawere 2011) have paid insignificant attention to the problems that privatisation of tertiary institutions have triggered to education stakeholders over the years. This under-exploration is in spite of the fact that privatisation of

tertiary education in Mozambique has been problematic since the 1990s when it was introduced. As such, it is surprising that most of the studies by the aforementioned scholars have concentrated on education at primary and secondary levels, without also attempting to reflect on the ‘thorny’ issues affecting tertiary education in the country such as privatisation. Yet it is through constant reflection on the nation’s key education systems such as tertiary institutions as well as educators, guardians and students of such institutions that problems are identified and long lasting solutions sought. As such, experiences and problems facing tertiary education such as privatisation are worth studying in order to seek permanent solutions.

As part of my research design, I relied on documentary information (books, newspapers, reports etc.), questionnaires and in-depth interviews (formal and informal). I carried out my study with participants attached (directly or otherwise) to four universities namely Universidade Pedagogica (UP), Universidade Eduardo Mondlane (UEM), Universidade São Tomas, and Universidade Catolica de Mozambique (UCM) between 2011 and 2012 in Mozambique. The sample consisted education stakeholders, that is, those that are directly affected by privatisation. These were students, parents/guardians and educators in the study area(s). A sample of 200 people (160 students, 20 parents/guardians and 20 Educators/Lecturers) was selected to take part in the research. The study was carried out in two Mozambican provinces, Maputo and Gaza, in particular students, educators and parents/guardians directly affected by privatization of tertiary education as representative of other tertiary institutions in the country with similar educational challenges.

Data collected from documentary sources, questionnaires and in-depth interviews were tabulated to show frequencies before being subjected to evaluative analysis. The Tables 1 and 2 respectively contain details of the people participated in the study and the data that were gathered during the study:

Table 1: Participant demographics

Occupation/Status	Age range	Gender	
		Male	Female
Teachers	30-65	6	6
Parents/guardians	40-65	14	14
Students	20-40	80	80

Table 2: Responses to closed questionnaire items on implications and challenges resulting from privatization of tertiary education in Mozambique

ITEM	RESPONSES		
	Agree (%)	Disagree (%)	Uncertain (%)
1. Privatisation of tertiary education is good.	9	90	1
2. Privatisation of tertiary education has and is improving the quality and effectiveness of education in the country.	8	90	2
3. Privatisation of tertiary education has more advantages to learners such as education material such as textbooks enough for everyone.	9	90	1
4. Privatisation helps sustain tertiary institutions in terms of running their systems in an efficient manner.	65	33	2
5. Privatisation of tertiary education has resulted in bottle neck type of education with only the children of the rich affording tertiary education.	83	10	5
6. Privatisation has and is resulting in the formation of social classes in Mozambique with the rich remaining in the so-called higher class,	83	10	5

middle class, and the poor in lower class.			
7. Privatisation of tertiary education in Mozambique has created more problems than solved, for example, causing drop outs and poor remunerations for workers in tertiary education.	8	90	2
8. Privatisation in at least tertiary education should be discontinued.	70	29	1
9. Most of the students want privatisation of tertiary education to continue.	10	80	5
10. Tertiary education in the country should be made free.	80	10	5

Discussion based on research findings

The research results in Table 2 above show different perceptions on challenges of privatisation and their implication for educational delivery at Mozambican universities. The main problem faced by both students and parents/guardians in Mozambique are soaring fees as some universities like Universidade Pedagogica and UEM are charging about 2 500MT (an equivalent of US\$100) and 3 000MT respectively, per month for their parallel degree programmes and about half that amount for the conventional programmes. As such, majority of the participants (90 %), perceived that privatisation of tertiary education is doing more harm than good. This was confirmed by 83 % of the respondents who pointed out that one of the major challenges and implications of privatisation of tertiary education in Mozambique is that it has resulted in the formation of social classes and bottle neck type of education whereby only children of the rich afford to pursue their studies up to tertiary level. This widens the gap between the poor and the rich, a similar phenomenon that occurred during colonialism in the country when due to racial discrimination and/or segregation, only the rich children of the privileged ruling colonialists and a small percentage of distinguished black students (normally children of the friends, puppets to the Portuguese or of the

rich- the so-called 'black diamonds') attending secondary education were allowed to enrol for tertiary education. This in itself shows that the standards and quality of a colonial educational system in Mozambique are inappropriate for a postcolonial system where the government believes that education is one of the vehicles to eradicate poverty, and to socio-economically and politically empower citizens who were alienated and disadvantaged for many years. In Mozambique, due to poverty and economic hardships, students and parents/guardians cannot raise the required money (for example given in the case of UP) for fees, worse still for education material such as textbooks to use at university and home.

The above scenario, however, does not only impact negatively on the poor, but on the general quality of education in the country. To this end, 90 % of the respondents concurred that privatisation of tertiary education has resulted in deteriorating education quality. This is because in many universities in the country, due to high fees, selection of students for tertiary education is now largely based on whether the student can afford to pay the exorbitant fees and not on the quality of passes at Grade 12 and entrance tests. In view of such educational contexts, I argue that weak literacy practices persist and students' capacity to understand texts for hidden meanings and draw lessons from whence will be severely compromised.

Though the problem of education quality is not a new phenomenon but ubiquitous in Mozambique, it was exacerbated by the introduction of ESAP in the 1990s. To make matters worse, the intended outcomes of privatisation in Mozambique especially in relation to tertiary education have not been met even to date. For example, while ESAP was meant to improve the efficiency of the country's institutions (including education) in terms of service delivery, the country's pedagogical delivery in tertiary education has remained poor mainly due to the quality of students enrolled, critical shortage of resources such as textbooks, space (lecture rooms), qualified educators and worsening and/or crippling levels of poverty. Mozambique has high levels of poverty (54.1% in 2008) and currently faces escalating staple food prices (US Government Report, 2009), crippling poverty levels especially in the rural areas (see Rambe &

Mawere, 2011; Mawere, 2012) which inhibit the education performance in the country. In the face of all these challenges, tertiary education in Mozambique is further compounded by rent seeking, corruption between educators and students, and differential levels of educator training across the country (Personal observations, 2007-2010). In case of the latter, rural and outlying institutions often have less access to educator development and support services than their urban counterparts, and fewer opportunities to attend in-service courses, which lead to lower quality education provision (Mulkeen, 2005). Tertiary institutions in the capital, Maputo, for example, have more experienced and qualified educators than those in the provinces, with most of the institutions in the latter areas having only one or no educator holding a PhD or Doctorate degree. Mulkeen (2005) reports that the deployment of teachers in primary and secondary education in Mozambique is done at the provincial level but provinces often have insufficient funds to recruit all of the newly qualified educators and this leads to high teacher-student ratios. This also leads to under-staffing in some isolated areas and poor pedagogical delivery which in turn compromises the quality of education in general and in particular in the tertiary institutions of the country.

Also, as noted by the majority (90 %), the crippling poverty levels that ESAP has prompted and/or exacerbated have negatively impacted on the national economy and in turn workers' remunerations. This has negative implication on the general performance of workers, in this case, tertiary educators and ultimately quality delivery in the classroom. As observed by contemporary literature (Menon, 2012; Mawere, 2012), job satisfaction and motivation are very crucial to the long-term growth of educational system at any level, be it primary, secondary or tertiary. Menon (2012), for instance, goes on to argue that job satisfaction and motivation probably rank alongside professional knowledge and skills, centre competencies, educational resources and strategies as the veritable determinants of educational success and performance. For her, professional knowledge, skills and centre competencies effectively occur when one feels satisfied, and motivated. This is

echoed by Ololube (2004; 2005) who notes that the roles and contexts of educations' motivational methods and tools cannot be underemphasized because high motivation enhances productivity which is naturally in the interests of all educational systems.

From the foregoing, it is clear that to ensure quality education and quality education provision in tertiary institutions, it is not only qualification of educators that matters, but also a fair balance between job satisfaction and motivation which guarantees quality delivery (in the classroom) and high productive relationship with the employees. Basing on their personal experiences and the known and recorded impacts of ESAP on the national economy of Mozambique, majority (80 %) of the respondents wanted privatisation of tertiary education to be discontinued as a matter of urgency. They wanted tertiary education to be made free, and entrance into such institutions as universities to depend on the quality of students and not socio-economic status. It appeared that the 10 % who disagreed with the view of discontinuing privatisation in tertiary education were either from elite families or those who knew they were not competent enough to be tertiary education 'material' had not been the 'blessings' of privatisation. On the other hand, the 5 % who were uncertain on whether privatisation should be discontinued in tertiary education might be those less informed on the general impact of privatization and in particular on how privatization impinges on the national economy and other such institutions as universities.

Improving Tertiary education effectiveness and quality In Mozambique: Some recommendations

It should be underscored that Mozambican universities have already adopted a system of entrance test for university vacancies as one way of ensuring quality. However, this has been perceived otherwise by some critics who argue that the system of entrance tests in Mozambican universities were put in place after realising that the quality of secondary education in the country was poor, and also to make money out of the already impoverished populations given that the number of vacancies in most universities in the country are

limited yet entrance fees paid by prospective students are not refundable. Following this argument, the system of entrance tests by Mozambican universities discredits the quality of secondary education (which is a gate way to tertiary education) in the country, and further impoverishes the Mozambican masses. In view of these critics, I argue that entrance tests in universities should be done free of charge, and the national government subsidises students fees, particularly those from humble backgrounds, at tertiary level so as to enable students from poor background to take part as well. In fact as long as socio-economic statuses of students remain a factor that determines whether a student is eligible to take entrance tests to be matriculated at a university and also to study thereafter, the quality of products yielded by universities in the country will be always poor regardless of the qualifications they may hold. This recommendation auger well with the majority (80 %) of the respondents' view that privatisation in tertiary education should be discontinued to ensure quality education, allow fair competition between students (from both poor and rich families) and lessen the burden of the poor in the country who may also want to pursue their studies. Such a measure is most likely to have a positive impact on the general quality of education and socio-economic status of many nationals given that majority of the people in Mozambique live below poverty datum line, yet education is one gate way towards success and breaking the cycle of poverty.

Also, although most of the Mozambican universities are encouraging their lecturers to embark on Masters' degree programmes, it is factual that majority of these lecturers are still teaching with first (General degrees) or second (Honours degrees) degree qualifications. Such lecturers are under-qualified to teach at tertiary institutions especially universities. This phenomenon, besides poor quality of students normally enrolled due to exorbitant fees for tertiary education, compromises the general quality of education in tertiary institutions. From that said, it appears more convincing in the context of Mozambique's education landscape to recommend that the country invest in tertiary educators' training and hire experienced qualified educators from neighbouring countries such as South

Africa, Zimbabwe and Botswana or even from Western universities to boost university teaching, learning and research. Drawing from my professional experience in Mozambique and from a critical and reflective perspective, poorly qualified teachers will always compromise the quality of education and in particular that of the products (students) in the country.

Adding on to the two recommendations given above, I propose the promotion of staff development programs through close collaboration between Mozambican universities with other universities in the region and beyond. This would go a long way in ensuring quality research, quality education provision, interpolation of ideas between Mozambican students and educators with their counterparts, hardworking and the development of self-discipline in university educators. This is to say that if quality education that embraces high competence in critical literacy, dedication/commitment and hardworking of university educators in a fragile post-conflict landscape such as that of Mozambique is to be achieved, collaboration with other 'well established' universities and/or researchers in the region and beyond remains a necessity.

Conclusions

The arguments and recommendations I have offered in this chapter have been primarily drawn from data obtained during research and my professional development journey, personal reflections and experiences as a researcher and educator in Mozambique. Statistics have shown that majority (80 %) of the respondents agree that privatization in Mozambican tertiary education be discontinued to guarantee quality education, equity and justice in tertiary education. Also, several recommendations have been suggested for the Mozambican government to consider in its attempt to revamp tertiary education in the country. Yet it should be emphasised that lessons that can be derived from Mozambique's experiences are that quality educational reform in developing countries is difficult to achieve (Mawere, in press) considering the crippling poverty levels in many of these countries. In fact, lack of

financial resources to adequately fund tertiary education in Mozambique is one among the major challenges impacting universities in the country and will remain so for a long time to come. This is premised on the fact that Mozambique, just like many other developing countries in the region, relies on donor funding for most of its grand educational projects.

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Dimensions of International Research Collaboration in Developing Africa's Higher Education- Lessons from the University of Zambia

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Abstract

Within the context of global research, international collaborative research is becoming increasingly desirable by researchers, and international collaboration seems to be a way to progress in Universities in the developing countries. Collaboration is encouraged at a policy level since it would lead to improved access of facilities and resources as well as improve the quality of education. For researchers, collaboration provides opportunities to work with other leading scholars in their field. This international dimension of universities is also essential to promote competition and produce high quality education and research output. Outputs of such collaborations include more innovative research outcomes, enhanced ability to address global challenges and stronger research capacity. Researchers, the world-over pay significant attention to initiating contacts with international partners in other universities with the aim of developing collaborations on common grounds. It is commonly assumed that international collaboration is beneficial but it turns out to be good only if the collaboration is successful. Often research collaborators may become overwhelmed with the attractiveness of international projects and overlook the challenges of international work such as complications arising from such effort. This chapter examines research collaboration at the University of Zambia with a view to determine the significance of collaboration. The authors who are actively involved in various international collaborations will bring

the dimensions of international collaboration through a Strength, Weakness, Opportunity, Threat (SWOT) analysis. Specific examples from international collaborative research with University of Nottingham, UK; University of California in San Diego, US; and Norwegian University of Science and Technology, Norway etc. will be used.

Introduction

Within the context of global research, international collaborative research is becoming increasingly desirable by researchers, and international collaboration seems to be a gateway to quality education in Universities in the developing countries. There are different ways of understanding collaborative research depending on the organizations and individuals involved. The collaborative research brought out in this chapter refers to the partnership existing primarily between academic institutions with the involvement of academicians as well as other stakeholders. The common feature of any collaborative research is the common goal towards which the different groups are working to achieve.

Collaboration is encouraged at a policy level (University of Zambia Strategic Plan 2007-2012) since it would lead to improved access of facilities and resources. For researchers, collaboration provides opportunities to work with other leading institutions and scholars in their field. This international dimension of universities is also essential to be competitive and produce high quality education and research output. Outputs of such collaborations include more innovative research outcomes, higher citation impacts, enhanced ability to address global challenges and stronger research capacity.

Researchers world over invest a lot of time in initiating contacts with international partners in other universities with the aim of developing collaborations on common grounds. It is commonly assumed that international collaborations are beneficial, but it turns out to be beneficial only if the collaboration produces positive results. We argue that an important aspect determining the success of research collaboration is the process that is involved in establishing

the collaboration. Here we propose a model that brings out the process of establishing collaborative research projects.

Over the recent years, there has been an increased effort by the developed countries to provide grants to less-developed countries to be involved in research and this often is conditional to collaboration with scientists from developed countries. One of the factors that have contributed to such grants and collaborations is the increasing interest in the global AIDS epidemic. Organisations from developed countries may be interested in promoting and funding research in developing countries for various reasons such as need for local data, to enhance image as international research collaborators and sometimes due to the cost effectiveness of carrying out research and development work in developing countries. University of Zambia (UNZA) has many international research collaborations. The present authors who are actively involved in various international collaborations will bring the dimensions of international collaboration through bringing out the processes in establishing research collaborations and analysis of the benefits and challenges of such collaborations through a number of case studies.

Process of establishing research collaboration

Garry (1999) describes collaboration and partnership as the process used by individuals or organisations to search for solutions that they cannot achieve individually. In this regard, “collaboration transforms adversarial interaction into a mutual search for information and for solutions that allow all those participating to insure that their interests are represented” (Garry 1999:7). This chapter adopts this view of collaborations in discussing the various aspects of international collaborative research.

Previous literature (Dufault Sullivan, 2000; Lengacher Mabe, 1992) suggests that many of models of collaborative research have been proposed, and some of the earlier literature also identifies issues and processes for team building (Gueldner, 1996; Kengeya-Kayondo, 1994; Kone et al., 2000) for successful collaboration. Such issues must be taken into account when establishing, planning and carrying

out collaborative research. This is promoted by the availability of 'seed money' grant before the bigger research project is proposed. At UNZA, for instance, before the call for proposal for the main Norad Masters Programme (NOMA), there was a call for start-up funds (2007-2008). As recipient of these funds, the partners at UNZA got to know the Norwegian partners better in terms of their expectations and working culture and also establish a rapport with them. The start-up funds were also used to carry out a pilot research before embarking on the bigger research project. This process we believe was an essential to the overall success of the project (2008-2012). Currently Norwegian Agency for Development Cooperation (NORAD) is launching the Norwegian Programme for Capacity-Building in Higher Education and Research for Development (NORHEAD) programme and again before making a proposal for the overall project, it is possible to request for seed money so as to establish feasibility and to understand the research partner better before embarking on the larger project. It is also possible that after the initial 'start-up' or 'seed money' phase, the partners may decide not to go ahead with the larger project.

In this study, we propose an adaptation of the interdisciplinary collaboration model proposed by Amey and Brown (2004) in the establishment of a collaborative partnership. This model brings out the role of an individual who initiates the collaboration. We choose to call this individual an 'Author' of the international research collaboration. There are various antecedent factors that determine the initiation of collaboration, these include factors in the environment such as policies as well as the motivation of the 'Author'. The 'Author' plays an active role in the pre- collaborative phase of the project by identifying a research partner with common interest, getting them interested in the collaborative research and getting the potential partners committed to the proposed research project. Most of the international research collaboration is based on availability of funds and therefore the pre- collaborative phase culminates with the development of a joint grant proposal. It is important to note that there may often be more than one 'Author' for international research collaborations, from each partner countries and/or institutions and

also that the pre- collaborative phase may begin with the possibility of applying for a research grant. The extent to which the 'Author' is effective in establishing and sustaining collaboration is also dependent on the formal authority this individual has.

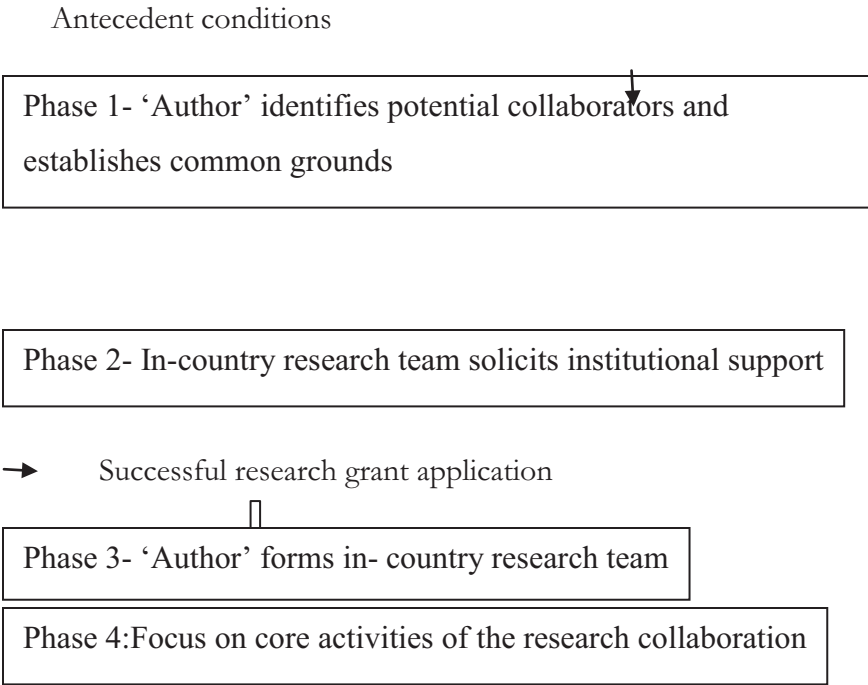
Amey and Brown (2004) propose that leadership changes from being directive to facilitative and then to being inclusive. We concur with the same in that for establishment of a collaborative international research project; the effort and expertise of more than one individual is needed. At the later part of the pre-collaborative phase, the 'Author' moves on to establishing an in-country team who will be cardinal to the planning, execution and evaluation of the collaborative research. In establishing the in- country team the 'Author' may assign specific roles to each team member. This marks the research collaboration moving from being individually driven to being collectively driven.

For the successful execution of any international research collaboration, the support of the home institution is essential. This leads to the next phase of the collaborative process of the collaboration being institutionalised. In order for the successful execution of any international research collaboration, the support of the top administration at the home institution is essential. The in-country team would need to convince the administrators of their institution about the importance of the collaboration and the benefits it brings to the home institution. From our experience at UNZA, we find that some of the benefits that administrators (The Vice-Chancellor and/or Deputy Vice-Chancellor) buy into are staff capacity building, institutional development, sustainability, education quality assurance and enhancement of the image of the institution. Therefore it would be up to the in-country team to strategize and prioritise these issues when making a case for institutional support. Fortunately most of the grant applications (e.g. NOMA) for international collaboration also prioritise on these issues. The institutional support are also formalised as a Memorandum of Understanding (MoU) or Research Agreement. Having institutional support gives the partners a licence to go ahead and can therefore

devote their time to core issues of the collaboration such as research design, planning and actual execution, among others.

Below is the figurative representation of the phases in establishing international research collaboration. We call this the Process Model for Establishing International Research Collaboration:

Figure 1: Process model for establishing international research collaboration



The above model brings out the process being initially individual driven and then moving on to become group driven and finally institutionalised. The Author often continues to play a leading role throughout the process and throughout the collaboration. In the light of the Author's leading role in research collaboration, we argue that investing time and resources in the pre-collaborative phase is a determinant of the success of collaboration.

Case studies of international collaborative research at the University of Zambia

Learning Disability Project (2004-2006)

The Learning Disability Project (LDP) was a two year research project that was funded by the National Institute of Health (NIH) in the United States of America. This was a multilateral project and the principal collaborators of this research project were Yale University in the U.S and the University of Zambia as well as Jyväskylä University in Finland. The project was necessitated by research conducted in the area of learning disability in Zambia based on previous research that suggests the prevalence of learning disabilities in Zambia, especially that non-specific disability was high (Kapungulya, 2000). The main objective of the study was to find out the prevalence and etiology of learning disabilities in Zambia for both in-school and out-of-school children, so as to gain a better understanding of the estimates of disabilities (specific and non-specific) as well as their etiology. Information of this nature is important to have as a foundation for assessment, diagnostic, treatment and intervention purposes. Other objectives included the following:

(1) To further enhance existing relationships and partnerships in the area of research with the view of building capacity in the area of research in Zambia.

(2) To build research capacity specifically in the following areas: assessment and diagnosis of learning disabilities,

(3) To conduct 4 small-scale pilot studies of the prevalence and etiology of learning disabilities in Zambia, using epidemiologically, clinically, etiologically, and educationally informed research designs.

(4) To conduct workshops in the various research methodologies that would be used in the study.

(5) Development and validation of an assessment battery for the diagnosis of learning disabilities.

The benefits of LDP to local and international partners included the following:

1. The research carried out by the collaboration contributed to filling in the existing gap in knowledge on the prevalence and etiologies of learning disabilities in Zambia.

2. The collaboration induced a cross cultural perspective to the research conducted.

3. A sustainable research network between University of Zambia, University of Jyväskylä and Yale University was established. Some of these partnerships have continued to work together on other research projects.

4. Improved efficiency of the partners involved as they learnt from each other. For example the Zambian team had to learn to be more efficient with the use of internet and respond promptly to any emails that related to the research.

5. The development and validation of assessment instruments such as the Zambia Achievement Test.

6. Capacity building is another outcome of LDP. This included the development of high quality skills and knowledge of local researchers and research assistants as well as international researchers on the team. Capacity development was also achieved from four Staff Development Fellows at University of Zambia obtaining Master's degree through the use of data collected in the project.

Conducting international collaborations are without doubt very valuable to both local and international parties involved. However, such collaborations are not without challenges. Many procedures that have to be followed in order to obtain permission to conduct research can be quite protracted due to the various bureaucratic processes involved. While the local team can easily understand why for example, getting clearance from the Ethics Committee can take longer than anticipated or why getting a letter from the Ministry of Education giving permission to conduct research in the schools can take a few weeks rather than a few days, the international collaborators might not. This can be a source of great anxiety for all

parties involved but more especially for the international parties who might sometimes feel that the local team may not be working as hard as they should to ensure that permission is obtained.

Related to procedure is the issue of how research is actually conducted in the field. For example the issue of informed consent is something that both parties need to agree on. While it is true that all the parties involved are in full favour of obtaining informed consent from the participants (as is required of researchers around the world) there are various issues with regard to this point that need to be ironed out from the word go. For example, the age at which an individual can personally consent to participate in a research, the wording of the consent form and information to be included. With the LDP project, we had to incorporate the requirements of the various parties involved although it took a while to get consensus from all the parties involved.

One of the sub-studies of the LDP project involved the collection of mouth swabs of some of the children involved in the research. Informed consent had to be obtained from the parents for this to be done. The communities in which we worked, especially the rural communities were very sceptical about this. As is the case with most research that involves biological samples, they began to be suspicious of our intentions as a research team. Rumours circulated that the research team was connected to witchcraft and Satanism. This highlights the issue of cultural differences. While this process of collecting mouth swabs might be appreciated and accepted by the American community for example, the Zambian community will require a lot more sensitization than just a brief explanation and a consent form for them to sign.

Equipment and infrastructure can also be a challenge to international collaborations. The swabs that were collected needed to be stored at certain temperatures in order that they may be preserved for analysis. Unfortunately, in Chipata where the research was conducted, most of the refrigeration facilities did not reach the very temperatures that were required to preserve the specimen that was collected. One of the lessons that was learned was that efforts should be made in advance to possibly identify and arrange adequate storage

facilities in advance for example from a hospital or clinic.

One of the objectives of the LDP project, from a more long term perspective was to work with the University of Zambia to try and influence policy in the area of learning disability. Objective 5 of the LDP proposal clearly states “influencing policy decisions regarding the placement, education, and medical treatment of children with learning disabilities (both specific and non-specific)” (p.5).

While the information collected and results obtained could be very useful in influencing policy, more work needs to be done to ensure that this actually happens, especially by the local team. One of the many ways this can be done is by conducting dissemination workshops with national government and other stakeholders with the view of identifying and presenting the different ways in which the findings of the research can influence policy. This point can also be merged with the aspect of publications. Publications are one of the many ways that local and international stakeholders in a particular area of study, in this case, the area of learning disability, can be informed and sensitized on research findings. With this in mind, more analyses and publications need to be produced from the data that were collected.

Related to the above point is the issue of dissemination at the community level. Findings of the research are yet to be communicated to the various communities we worked with both in Chipata and Lusaka. One of the major constraints is financial. The local team would have to travel to the various communities in Eastern Province where the research was conducted. A trip of this nature has financial implications considering the economic status of Zambia. However, this is very important as it will provide knowledge to the communities and particularly the participants and their parents on the findings, what they mean and how they can be helped if need be.

Reading Support for Zambian Children (on-going)

The completion of full primary schooling is one of the UN Millennium Development Goals (UNDP, 2010). One of the most important achievements supporting success in primary education is

that every child should have the opportunity to acquire successful reading skills because of its central role in knowledge acquisition. The reading support for Zambian children (RESUZ) project was initiated in 2010 due to the continued reported low reading levels among Zambian children completing primary education (SACMEQ, 1998, 2002; Monitoring Learning Achievement (MLA) assessment, 1999). The project is a 3 year collaborated project with a memorandum of agreement (MoA) between the University of Zambia and the University of Jyväskylä, Finland through the guidance of Professor Heikki Lyytinen (Jyväskylä, Finland) and Professor Robert Serpell (Zambia). Other collaborating partners are from the Ministry of Education in Zambia. The collaborating partners of this project share a common vision of helping Zambian children to acquire quality education in terms of basic reading skills in the Zambian language with much ease because of the transparent nature of the Zambian languages. Research in transparent languages like Finnish has shown that children learn to read faster compared to the opaque languages like English. Because Zambian languages are transparent, it was envisaged that the acquisition of reading skills in the local language (CiNyanja for Lusaka region) would enable the children to easily transfer their basic reading skills in reading other languages including English.

The Finnish collaborators identified a computer based learning tool called the Graphogame that have worked in the helping of Finnish children with learning disabilities learn to read successfully. Hence, the project aimed at introducing to the Zambian first graders the Graphogame considering that the nature of the Zambian languages is similar to that of the Finnish with consistent grapheme-phoneme correspondence. The results of the intervention for over 200 children showed significant gains in the mastery of the number of letters on both the game and the performance at post-test on the spelling test which measured letter- sound knowledge and word recognition.

An important benefit of this collaboration is that within the project, several factors that may affect the acquisition of early reading skills are investigated. This brings to the fore how different

dimensions may be able to explain the variance in the rate of reading acquisition. These sub studies include the investigation of the children's family background, teacher beliefs and attitudes towards teaching, learning disabilities like Dyslexia and how it can be curbed by Graphogame intervention, teacher training and curriculum for early grade teachers. This collaboration therefore brings together a host of factors that could affect children's reading acquisition. Out of this project stems one significant contribution to the reading research community. Through this project, capacity building of specific expertise all aimed at enhancing quality of education, being a much needed resource in most African universities has been realized. To the Zambian end, five members of the research team will obtain their doctorate degrees. This capacity building extends to benefit the University of Zambia with improved quality of education in terms of increased expertise in the field of reading.

Further, this collaboration brings together ideas from different universities with diverse cultures and experiences to understand and execute a common goal. This enables Knowledge building through practical realities of conducting intervention research in contexts that differ as that of the Zambian educational challenges such as high teacher-pupil ratio, dilapidated school infrastructure and under-resourced schools. And the project will increase general scientific knowledge concerning the dynamics of reading acquisition in Zambia, a pre-requisite to improving the quality and efficiency of mainstream education.

Collaborations are not without challenges. The first challenge faced by the research team is that there is division in decision making especially for the institution that receives financial support. Decisions are normally tied to the priorities by the funder not necessarily by the research team. This is a huge challenge of the collaborated programmes where one institution is the main funder and advances the agenda for the project, despite the challenges faced in the host country.

Secondly, another challenge is sustenance of projects. When the funding period elapses, and degrees are obtained, there is no continuation of such programmes. Most communities like the

schools where the research is conducted develop an attitude that researchers just want to obtain degrees and leave. It is important that such programmes are sustained by the host countries where the capacity has been built so that continued support in the concerned field is given to relevant consumers that need the expertise. To ensure that these projects are sustained, the host institution like the University of Zambia through the target departments can take keen interest of the findings and set aside funds for further research of a particular field of research. Aside the commitment of the host institution, the research teams can also consider writing proposals to other stakeholders that advance similar agenda. Considering that the host institution has an upper hand in the project, it may give confidence to the interested stakeholders since the university is considered as the centre for research whose findings help to inform policy.

Benefits of international research collaboration in the context of UNZA

Fullan (1993) stated that “effective collaborations operate in the world of ideas, examining existing practices critically, seeking better alternatives and working hard together at bringing about improvements and assessing their worth” (p. 57). It has been recognised that it is critical for the collaborating research group to share the vision and purpose and therefore building of relationships is fundamental to the success of international research collaborations, and effective collaborations as often characterised by building and sustaining “win-win-win” relationships.

Loan-Clarke & Preston (2002) have brought out certain benefits of collaborative research and we have used this perspective to highlight the benefits of the international research collaborations at UNZA:

(i) Collaboration ensures a more **effective use of individual talents**. The current trend of research has moved from being based in one discipline to being multi-disciplinary. Research has also increasingly become complex requiring a wider range of skills and knowledge. The research carried out as a part of NOMA project

(2008-2012) involved looking at the Neuropsychological effects of HIV and AIDS in the Zambian adult population. This is a typical example of a research that needs a multidisciplinary team with wide range of skills. The research team for this research included Neuropsychologists, Health Psychologist, Developmental Psychologists, Psychiatrists, Physicians and Psychometrician. To get this wide skill and knowledge base would not have been possible without the research collaboration UNZA had with Norwegian University of Science and Technology (NTNU), Norway and University of California in San Diego (UCSD), U.S.

(ii) **Transfer of knowledge or skills** has been identified as another benefit of collaborative work. Working in a team with international researchers offers one the opportunity to gain knowledge from each other. The Zambian researchers in RESUZ project have the advantage of interacting with Finnish researchers who have developed the 'graphogame' and thereby gaining knowledge on using that technology and the international researchers on the application of 'graphogame' in the Zambian context. The Zambian research team in the LDP project has also gained knowledge on learning disabilities in Zambia and on using standardised tests to measure achievement; while the international partners have also gained useful information on the etiology of learning disability in Zambia and the cultural context in which it exists. The transfer of knowledge is sustainable and often goes documented as publications.

(iii) Collaboration may be a **source of stimulation and creativity** and this is more likely in international research collaboration with partners from diverse backgrounds. According to Loucks-Horsley et al.(1998) collaboration may result in cross-fertilisation of ideas and thereby bringing out new perspectives. The NOMA researchers were able to appreciate the immunological, neurological, psychological and psychiatric challenges faced by HIV positive individuals and thereby propose an innovative holistic care and support program for HIV positive individuals.

(iv) Collaboration provides **intellectual companionship**. Working together with a team of researchers provides support for the

work. When there is any problem, the researchers can consult their peers on the team for advice. The Zambian researchers very often consult with the international research partners for advice on data collection techniques and data analysis, whereas the international researchers rely on the expertise of Zambian researchers in the design phase of the study in choosing a representative sample, culturally appropriate ways of measuring a variable and recruitment procedures. These kind of consultations and exchange of ideas also lead to transfer of knowledge that was earlier discussed.

(v) Collaboration **extends the individual researcher's networks**. UNZA researchers through collaborating with international partners in the US, Finland and Norway have a wide network to approach for current and future consultative work. Sometimes the research collaboration may be bilateral but the collaboration extends beyond the partners with who the MoU was signed. In the NOMA project the partners are from UNZA and NTNU. But since NTNU also partners with UCSD, UNZA researchers have also established collaboration with UCSD and since UCSD collaborates with researchers in China and Brazil, the Zambian researchers could also network with them.

(vi) Collaboration **enhances dissemination of projects**. This directly stems from the previous benefit highlighted on increased networks. Having an increased network also gives the opportunity to disseminate the research findings on a wider choice of journals and at international conferences.

In addition to the above, from the case studies on international research collaboration at UNZA, **capacity building** and **institutional development** have also been achieved through international research collaborations. The LDP and NOMA projects have resulted in many individuals obtaining Master's degree and then going on to work at the University of Zambia. The RESUZ project is providing opportunity for five individuals to obtain PhD. These efforts not only contribute to the capacity building of students involved in the study programme; but also provides for professional development of staff who are involved in providing research supervision to the students. In order to facilitate research and make it

sustainable, often a good part of the budget goes towards establishing library, laboratory and internet facilities at UNZA thereby contributing to the institutional development.

Perceived challenges of international research collaboration in the context of UNZA

Often research collaborators may become overwhelmed with the attractiveness of international projects. They often overlook the challenges of international work such as complications arising from such effort. Such difficulties are a natural part of most collaboration, and are often overlooked until something goes wrong. When the collaboration is derailed for any reason, the parties often start pointing fingers at each other and blame language differences or cultural misunderstanding. We argue that some of these challenges can be avoided if the time and resources are allocated in the pre-collaborative phase to build a 'team'. There are other challenges which are a part and parcel of international research collaboration and very little can be done to avoid it, but much can be done to reduce its impact.

McGrath (2004) has brought out certain challenges of collaboration and we have used this perspective to highlight the challenges of the international research collaborations at UNZA:

(i) Collaborative research may result in **additional monetary costs**. While many international research collaborations are supported by research grants, there may be some unforeseen additional costs that come up on the way. In the NOMA project, the need to include more biomarkers in the research came up after the budget had been approved. While this inclusion would add rigour to the research, it was a burden on the partners to find additional funds and compromise on some of the travel and other benefits agreed for the researchers.

(ii) Collaboration often demands **additional time**. Time is always a constraint for academicians who are involved in teaching, research and community service, as is the case with academic staff at UNZA. While research is supposed to be part of their work responsibility, most of the academic staff are over-burdened with teaching large

classes of students, marking exams and tests and supervising student research work. While international research collaboration may be attractive, it would demand additional time from the researcher. The researcher would need to spend a considerable amount of time keeping the collaborators of the progress, writing up reports, writing up results. Planning for research is also time consuming and this also requires a lot of patience and respective listening of ideas to avoid conflict. Different parts of the research may be carried out in different locations as was in the case of LDP project, and this calls for further time management.

(iii) Collaboration may result in **additional administrative procedures**. Most project coordinators at UNZA of international research project spend more time on administrative work than on the actual research work. Many administrative procedures are bureaucratic. At UNZA, for example, clearance of any payment has to go through at least two offices and to the internal auditor before it is cleared. This is not only time consuming but also frustrating to a researcher who would rather just be involved in the research than being bothered about administrative issues.

(iv) Additional challenges may derive from the **university culture** and from other cultural norms existing in the country where research is carried out. This can arise from a variety of issues such as what research is most timely and important to pursue, as well as ethical issues to be considered. The LDP had some challenges over the informed consent issue as was brought out in the earlier section. The western culture for example supports the idea of individual, independent consent but this concept may be not be as evident in cultures such as in Zambia pre-eminence is given to group such as tribe or family. It is also likely that such cultural difference can be misinterpreted as educational limitations or language barriers.

Conclusion

International research collaborations are becoming more and more popular and will continue to expand to all educational levels as the world becomes more globally connected. Research problems know no national boundaries and will attract international research

team to establish networks with researchers around the world. They are very important to all parties involved for an array of reasons. Such collaborations can be very successfully implemented but it requires a great deal of co-operation, compromise, mutual understanding and the patience of all involved parties. The success of a collaborative research goes beyond parties successfully submitting a research grant proposal and finally being awarded the grant. It extends to the actual implementation and completion of the intended research and this process largely depends on the working relationship of the parties involved.

Disclaimer: This chapter represent the views of the authors only and does not necessarily represent that of the University of Zambia, funding agencies or the research collaborators mentioned in this chapter.

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In the last two decades, erosion in the quality and effectiveness of education systems especially in sub-Saharan Africa has been compounded by factors –such as exogenous pressures precipitated by unsystematic provision of foreign aid – fostering corrupt practices, inadequate teacher training and limited deployment of professional educators to under-served communities. Yet, quality education is needed to attain high levels of critical thinking, analytic interpretation, academic creativity, innovativeness, effectiveness, personal and inter-personal skills in problem solving. This book, which focuses on Mozambique, South Africa, Zambia and Zimbabwe, critically reflects on primary, secondary and tertiary education in Southern Africa with a view to explore the opportunities, constraints and challenges that practitioners, learners and other educational stakeholders face in their daily lives. The book draws on the findings from the aforementioned countries, to advance the thesis that education in sub-Saharan Africa faces problems of epic proportions that require urgent attention. Hence, the primary objective of this book is to serve as a drive and medium for informed change, critical thinking, constructive analysis, synthesis and evaluation of different situations, settings and problems situated in the interface of theory and practice in the education fraternity.

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